THE MODEL CRAFTSMAN

AUGUST 1947
35 CENTS

WALTER STALTER

BOSTON AND MAINE LOCOMOTIVE PAGE 14

PREVIEW FOR *Fall*

(and all worth waiting for!)

Locomotives:

PACIFIC	**(4-6-2)**
CONSOLIDATION	**(2-8-0)**
ATLANTIC	**(4-4-2)**

We're re-tooling for these prewar beauties right now. They will be the best looking, finest operating locomotives we have ever made. *New* detailing, *new* trouble-free drive, *new* powerful Pittman motor, plenty of surging drive to skim over grades even with heavy loads. *New* die castings, which mean no machining or ***soldering***. PRICES will be surprisingly low—watch for announcement of delivery dates. . . .

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Our introductory kit contains everything necessary to put the beginner in the "railroad business." With this kit as a nucleus you are on your way to railroad "empire." Kit contains:

1 0-4-0 Camelback switcher locomotive kit.
4 Assorted car kits.
1 Caboose kit.
Straight and curved sections of track.
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DELIVERY: In the Fall—watch for date.

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This Fall your Mantua dealer will have a complete line of bona fide Mantua spare parts for your greater convenience in making replacements or repairs.

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Just plug into 110-volt A.C. house outlet. Connect terminals to wire from track. Delivers 12-volt D.C. Has throttle lever for full range of speeds. Nothing else required to operate trains (for reversing, simply add reversing switch to rectifier unit—this accessory available later at nominal cost).

Operates up to three HO locomotives at one time. $14.95 AT YOUR DEALER'S NOW.

Our 1947 HO Catalogue and Handbook is available; Price, 50 cents.

MANTUA METAL PRODUCTS CO.

"The ALL-METAL Line"

WOODBURY HEIGHTS NEW JERSEY

NYE STRIKES BACK!

Mr. Ivan W. Saunders
Pittsburgh, Pa.
Dear Mr. Saunders:

I read with inspired amusement your verbal convulsion concerning the PCC trolley car in the April MC of which I am guilty of drawing and condemned by your opinion. I commend you for your interest in my contribution, but to keep the record straight, would like to present some of the technical facts which you assume to be an authority on.

First of all, these drawings were made from GENUINE engineering drawings submitted to the Key System Lines of Oakland, Calif. The nomenclature which I used was derived from these same drawings and specifications which were submitted jointly by the St. Louis Car Company and the General Electric Company on an invitation from the Key System Transit Lines, of which at that time, I was the senior draftsman in the engineering department of the Key System. This company operates over 500 motor coaches and 400 transit and trolley cars so cannot be considered as a novice in the business of trolley car design or operation.

The nomenclature used in the MC drawings is the same which has been used on trolley work here, and while the term "trolley idler contactor" (*and not CONTRACTOR as reproduced in MC Safety Valve*) was used, in yard jargon, it is sometimes referred to as trolley fork as a shop term but not as an engineering term. And, furthermore, perhaps you are unaware that the term trolley winch is proper, and is used in trade catalogs and specifications. The terms *trolley pole, trolley iron, trolley overhead,* are frequently used in shop terminology in local yards for want of more descriptive names.

More specifically, if you had looked closely you would understand that the trolley idler contactor referred to the moving part and not the trolley fork which is the whole assembly. And cables are used to haul down the trolleys on the west coast in many cities!

If you were more fluent and versed in engineering terminology, you would understand that technical nomenclature sometimes changes in localities, the same as other grammatical expressions. Expressing the hopes that this explanation temporarily performs the function of a suture to your oratorical effervescence, I'll stick to the trolley winches, and you adhere to the spring retrievers as they say in Pittsburgh! Cordially . . . *Willis L. Nye, San Lorenzo, Calif.*

THE MODEL CRAFTSMAN

RAMSEY NEW JERSEY

Including "THE MODELMAKER"—Est. 1924 and MINIATURE RAILROADING Magazine

EDITOR AND PUBLISHER *Charles A. Penn*
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VOL. 16, NO. 3 AUGUST, 1947

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NO TECHNICAL DATA!

Keep up the model stuff. How about some *solid* ship models, people keep asking us for cheap plans of such. Keep away from technical data, the kids *do not want* it! We want data on boats, such as what is an A, B, C, D Class car, also what do you mean by Class such and such—? In this part of the country it has been all planes; very little is known about boats and cars. How about articles that will give us some data on track sizes and how they are constructed, plans on how to build cars and boats. So far, all your articles are about some club and what they are doing. Articles on cars and boats similar to your trains and plane articles which are excellent! . . . *D. Bonamy, Hobby Work Shop, Seattle, Wash.*

CARS OF THE MONTH

I was pleased to see plans of the B. & O. box car and I would like to see more plans of other cars with lettering, especially in O-gauge. Why not put them in an article titled, "Cars of the Month"? I would also like to see more on Pullmans. . . . *Bill Oltman, Gurnee, Ill.*

MORE DETAILS PLEASE

I think you have a very good magazine, but try and give a little more detailed information with the model railroad plans that you print, and if you could print both sides of a loco it would help a lot in getting the detail on the other side. Thanks. . . . *C. E. Heckman, San Bernardino, Calif.*

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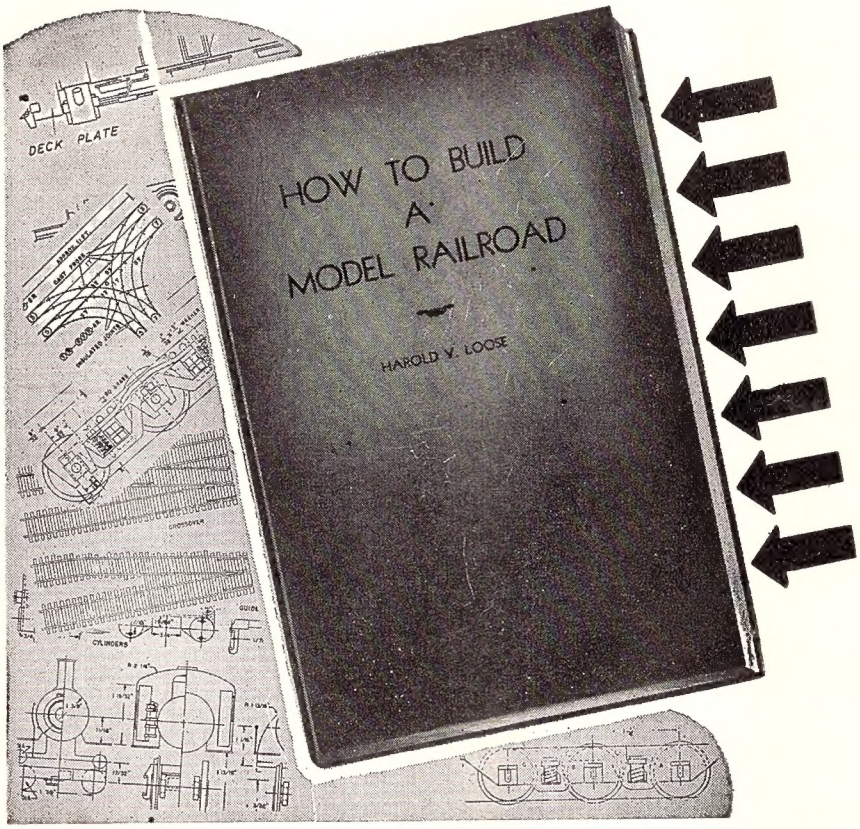
HOW TO BUILD A MODEL RAILROAD

A BEGINNER'S MUST — A REFERENCE BOOK FOR VETERANS



CHECK THESE FEATURES

- √ SCALE and GAUGE
- √ DESIGNING LAYOUTS
- √ LAYING TRACK
- √ SWITCHES and CROSSINGS
- √ POWER SUPPLY
- √ LOCOMOTIVES
- √ CAR BUILDING
- √ SIGNALS and CONTROLS
- √ SCENERY
- √ AND MANY OTHERS

This new edition of HOW TO BUILD A MODEL RAILROAD has been COMPLETELY revised right up to present day standards. It has many new plans and illustrations (more than 75 included). Answers all the questions asked by the man who is starting a miniature layout as well as the problems encountered when a model railroad has gotten under way. The spiral binding permits pages to lie flat for convenience while working. Whether you are a beginner or an experienced enthusiast, your library is not complete without this fine book.
New editions now ready, price $2.00 postpaid.

MODEL CRAFTSMAN **RAMSEY, NEW JERSEY**

RAILROAD CLUB NEWS

NEW YORK, N. Y. Looks as if the New York Live Steamer Society with Bill Eliot at the throttle really means business. The boys are out to conquer any and all live steam fans in their neighborhood, and even if you're only lukewarm to the subject—better look out for they'll have you eatin' the stuff! Their loop of track is located out on Long Island at Massapequa, with an ideal setup for thoroughly enjoying your hobby.

These boys served notice not long ago that they intended to make a place on the map for their organization and apparently they weren't kidding. Your editor was sitting at his desk, calm and collected (?) per usual, opening his morning mail, when out pops a nice shiny illustrated booklet with the New York Live Steamer Society plastered all over its pages. *Whew—these boys are hi-steppers!* After reading this fascinating book, you just can't help yourself. You're *"in like Flinn"* for live steam! With the cooperation of the New York Central and the Atlas Tool Co., these fellas have turned out a creditable job, chuck full of railroad tips cunningly designed to entice the railroad fan into live steam. *More power to you, fellas!*

WASHINGTON, D. C. The railroad boys in your Nation's capital have at last started their new club layout in the Union Station. The base platform is complete and now the real work begins. So far, the O-gauge track has been planned, with the HO division yet to be determined. Work nights for the time being are Monday and Friday starting at 8 p.m. The boys have a real problem on their hands which is going to mean plenty of digging and hard work. It seems that the Station Management made certain stipulations in giving the club quarters for their layout—an operating pike to be open for public display by Christmas! *And brother, that's a big order!*

BALTIMORE, MD. The Baltimore Society of Model Engineers is now settling down in its new quarters located in the basement of the Druid Branch Post Office, 1217 W. North Ave. They call it *limited space,* but it looks mansize from this point—71' x 43' in area! Considerable work had to be done before starting on any platform work, involving cleaning and painting, as well as installing electrical and plumbing work. But they're the boys to do it, and it shouldn't be too long before the wheels will again be humming on the Baltimore Pike.

PHILADELPHIA, PA. The Germantown HO Engineers have a new addition to their midst, a novel track cleaning car. According to their paper, the W. & C. V. News, the model is in the form of a tank car with six wheel trucks. Carbon tetrachloride will be fed to the rails by use of a needle valve feeding felt wicks which will contact the rails. Addi-

(*Continued on page 48*)

SUPPLYING THE NATION'S HOBBYISTS FROM THE SAME ADDRESS SINCE 1890

CORR'S

Casco Motor Tool..W/Acces..(Above)..	$22.50
Dremel Moto Tool Kit..W/Acces	23.50
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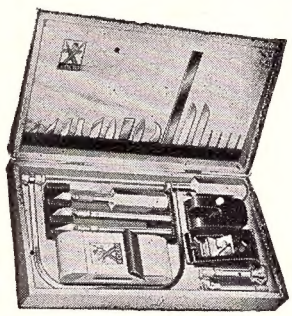
Woodburning Pen Set	2 00
61-80 Carbon Drill Sets.....W/Case..	4.00



No. 85 X-acto Tool Chest—3 all-metal knives; assortment of blades; saw; sander; stripper; planer; 2 drill holders; 10 drills; 6" steel ruler; complete in wooden chest, $12.50. (Illustrated)

X-ACTO #1 & #2 Knife.....	$ .50
#51 and #52 Knife	1.00
#83 Deluxe Knife Set.....	5.00
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#80 Whittlers Knife Set.....	2.00
#84 Small Tool Chest	7.50
#77, Gouge Set	3.00

Other X-Acto tools available are: Pliers, Protractor, Tweezers, Hammer Set and those items contained in #85 Chest.

RAILROAD ACCESSORIES

Our stocks are rapidly becoming complete as production is increasing. Most all items for "O", "OO", "HO" are now available. Full line of Mantua, Varney and Walther's are in stock. Whatever you may see advertised elsewhere in this magazine, the chances are we will have it.

Varney Power Trucks "HO"	$11.50
Pittman Power Pack	17.75
Challenger Switch Machine	2.50
Kasiner "O" Stream. Pullman (Comp.)	8.50
Kasiner "O" Stream. Coach (Comp.)..	9.50
Kasiner "O" Baggage-Mail (Comp.)..	8 75
Kasiner "O" Duplex Pullman (Comp.)	8.95
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"HO" CAR KITS

Varney	$ 1.90
Lehigh	2.50
J-C	1.35
Ideal	1.75
Mantua	2.95
VARNEY'S New "O" Gauge B. & O. Ten Wheeler Loco Kit	$100.00
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"HO" LOCO KITS

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Cannon "300"	B	19.50
Torpedo	B	18.50
"OK" "29"	B	18.50
Rogers "35"	C	16.50
"OK" Raceway-Marine "60"		26.00
Madewell	C	18.00
Cannon "358"	C	21.50
Fleetwind	C	24.75
Rocket	C	22.50
O'K Super 60	C	21.00
Atwood JH	C	23.50
Pacemaker	C	24.95
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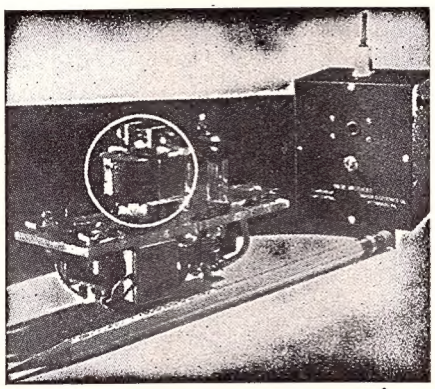
McCoy RC or Air.	C	35.00
Hornet RC or Air.	C	35.00
Ohlsson 60	C	18.50
Cyclone GR-A Dual Ign.	C	23.40
Cyclone GR-A Single Ign.	C	22.65
Minijet		35.00
O'K CO-2 Engine		7.50

We have a complete stock of all leading gas motor parts.

CHAMPIONSHIP RADIO CONTROL



★ SMALL ENOUGH for Class B. Can be installed in control line models. The last word in scientific plane control by radio! Equipment furnished includes transmitter in black crinkled finished metal case size 4 x 4 x 6", range approximately 2 miles; receiver size 4 x 1 1/16 x 2¾" high; weight 5 ounces, operates on 4 Pen-Light batteries (2 ounces); 1-45V, "B" Battery (8½ ounces); and escapement unit size 2¼ x 1⅛ x 1" high, weight 1 ounce (not shown). Also useful in model railroading for radio train control **$59.50**

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New Authenticast Catalog
Metal Ships—Tanks—Planes—35c

Established 1890.

CORR'S

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PLUS MANY OTHERS

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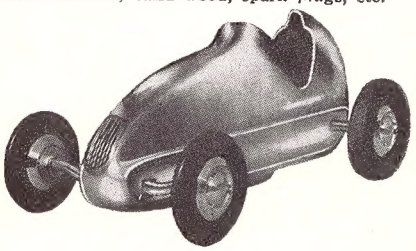

RACE CARS

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Complete stock Wheels, Tires and Parts

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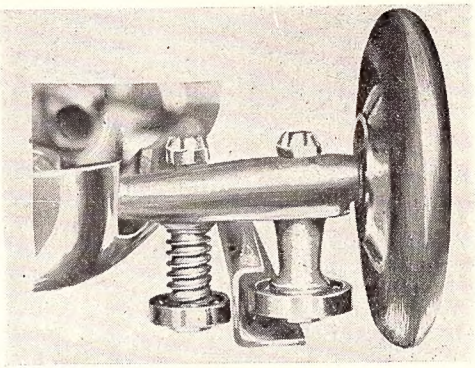
Marine One Pound Gun.....	4.00
Marine Artillery Field Piece.....	5.00
Innovation Cannon, Unfin.	8.50
Innovation Cannon, Fin.	13.95

Rail Adapters for your Car



By BILL DECKER

WITH rail tracks springing up all over the country, more and more race car fans are converting their favorite spindizzies over to rail racers, to try their hand at the real sport of midget auto racing. As mentioned many times before, the best rail car in the world will never be a top-notcher with a poor adapter setup. So a little time and energy put into alignment of the bearing studs will prove well worthwhile.

Basically, there are three methods of attaching the bearings to your car. The first method uses only three bearings, which has been tried several times without too much success. At this time, we cannot see any advantage of this system over the conventional four-bearing system, so let's not concern ourselves with it at present.

For the average model race car, the straight four-bearing system is recommended, using two bearings on springs and two held rigidly. Because this is the most popular type hook-up and is used on the present world record holding cars, we shall describe them as completely as possible. A list of the materials required is as follows: 4¼"-28 N.F. Aircraft bolts, 3" long with nuts; 4 pcs. ¾" dia. dural, 2½" long; 2 springs ⅜" I.D., 1½" long, 8 coils per inch, .050" dia.; 2 washers ⅝" O.D. x ¼" I.D. x .025" thick; 2 R-8 New Departure Ball Bearings or equal; and 2 R-6 New Departure Ball Bearings or equal.

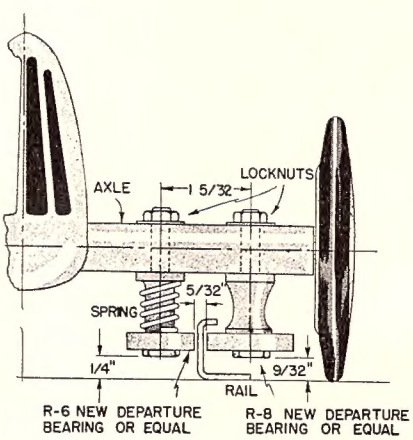
It might be best to describe my procedure in laying out and drilling holes for the adapters. A large size surface plate and an angle plate was used in laying out my center lines, but any real flat surface may be used. Turning the car sideways, scribe a centerline with the use of a surface gauge. Do this with extreme care or your car will have a tendency to dog-track since all measurements are taken from this line. Because axle widths vary, it is very difficult to give an exact dimension that will be suitable for every car. With the big bearing held closest to the wheel and the smaller bearing toward the center of the car with a distance of 5/32" between the outer races of these two bearings, try to locate them in the center of the space between the tire and frame or body. Set your height gauge so that the point falls midway between the two bearings in your estimated position. Now sliding the height gauge back to the rear axle, position your two bearings 5/64" on each side of the point. This may bring one or the other of the two bearings too close to the tire or the body. If it does, shift your front point over slightly to compensate for it. When you have finally found a point equidistant from center line of car to an imaginary line bisecting the distance between the large and small bearings on front and rear axles that does not bring any of the four bearings too close to the body or wheels, scribe this line on both the front and rear axles. This will be directly over the rail when your car is sitting on the track with the adapters fastened.

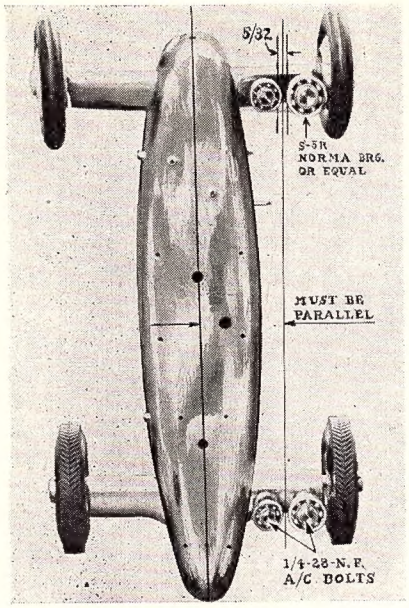
We must now lay out the centers of the holes for the adapter studs. The distance between these two holes will be half the diameter of the large bearing, half the diameter of the small bearing, plus 5/32" or 9/16" plus 7/16" plus 5/32" equals 1 5/32". With the car still clamped on its side, scribe a line on the front and rear axles 41/64" above the center line on both axles and a line 33/64" below the center line also on both axles. Now before drilling, check yourself once again by holding the two bearings first on the front and then on the rear axles so that the two center lines just scribed show through the centers of each bearing and leave 5/32" between the outer races. Center punch a mark on these lines so that there will be plenty of stock left around the hole when you drill it. The natural place will be the center of the width of the axle, but due to the stud for the front wheels and the rear axle usually falling into this position, it may be necessary to go either forward or behind in order to clear them. Remove the car from the angle plate, as your general layout is finished.

On 90% of the rail cars, the free running wheel is of a slightly smaller diameter than the drive wheel, giving the car a slight slope forward. It is necessary to compensate for this when the car is in an upside-down position for drilling the holes for adapter studs. Usually, I remove all four wheels and rest the car on four steel blocks or discs turned just large enough so that no part of the car touches the drill press table. The blocks or discs on front and rear axles will be of different sizes, depending on the difference between the front and rear diameters. You must bear in mind that it is *absolutely necessary* that these holes be drilled in such a way that when the car is set on the four wheels the studs will be *absolutely perpendicular to the track surface.* Using a number three drill (*tap drill*), drill the four holes center punched in the layout. Without disturbing the car from its blocks or discs, replace the number 3 drill with a ¼"-28 N.F. tap in the drill chuck. Thread about six or seven full threads in each hole by turning the tap into the holes by hand. I usually run the tap all the way through while it is still chucked, but this is not absolutely necessary. Some fellows prefer to finish threading these holes by hand, holding the tap in the conventional tap wrench. If a spot facer is available, it should be used pilating in these four holes, giving a smooth surface for the adapter spacers to seat on. I believe that if a man is extremely careful, however, he will be able to file a suitable surface.

Next step will be your adapter bolts. These are purchased from an aircraft supply house and will be found to have an extremely short thread, making it necessary to thread these bolts further. Thread to within ¾" of the head. The thickness of the head is usually too much and will have to be taken down either in your lathe or by filing. The head should be no more than ⅛" thick.

Turn your adapter spacers as shown in the drawing. The length of these spacers will vary with the individual car, but here is a set rule that will determine this length. Make the spacer for the large bearings so that when the adapter is assembled, the head of the bolt will be 9/32" above the track surface. The spacer for the small bearing should be long enough so that the head of these bolts will be ¼" above track surface. Cut the springs to a length so they will be slightly compressed when the bearing is in lowered position but still not long enough to prevent the bearing from being raised at least 3/16" above the big bearing. Assemble your adapters, using the two ⅝"



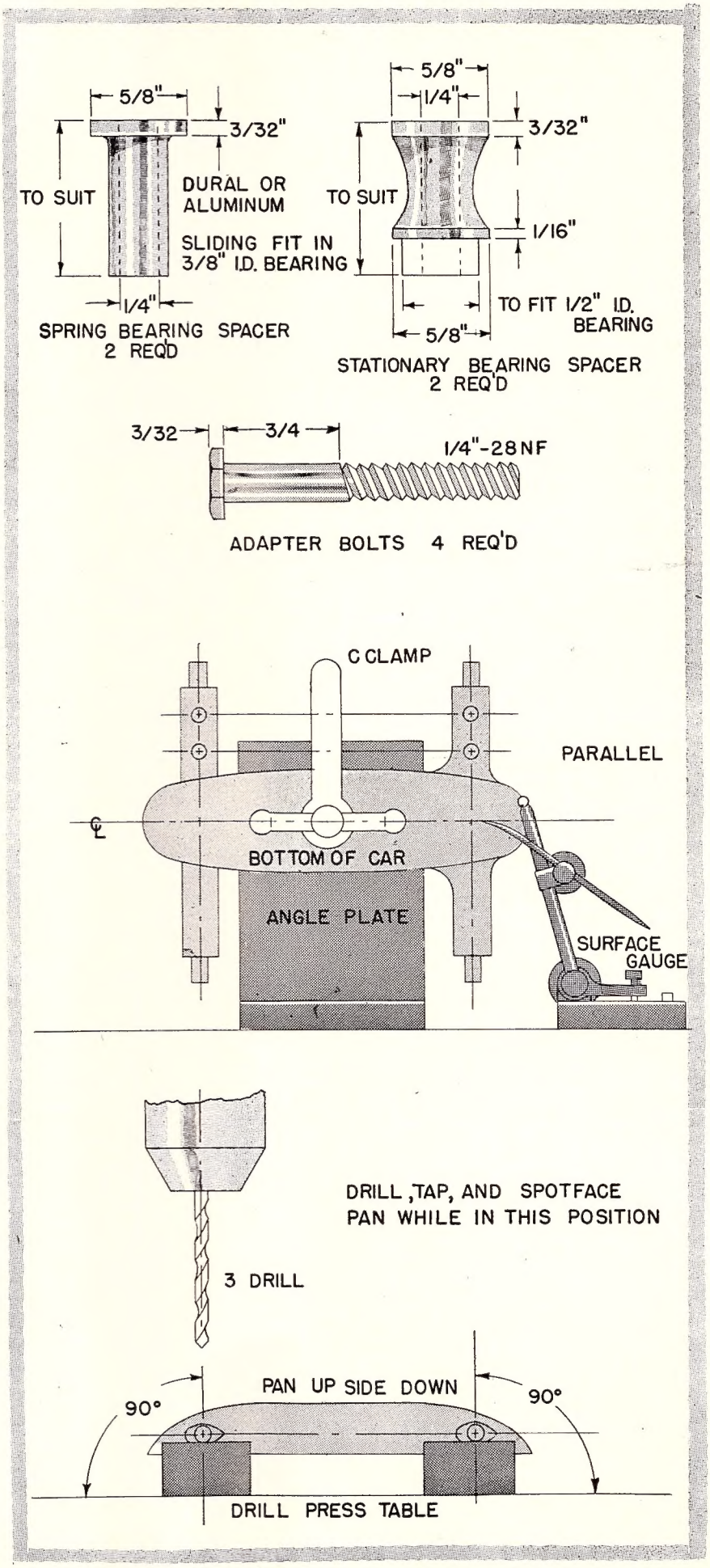


diameter washers between the head of the bolt and the two large bearings. These are merely to prevent the big bearings from sliding down over the head of the adapter bolts. More than likely, there will be a short amount of the adapter bolts protruding up above the nut. This should be sawed off flush. Most aircraft bolts come with castellated nuts and can be used to good advantage by drilling the bolt with a small hole, using one of the grooves in the nut for a guide. A small cotter pin inserted through this hole will act as a triple safety measure, preventing the nut from turning loose.

From experience, we find it is not good policy to draw up too tight on the adapter bolts as this puts added strain even before being subjected to any abuse it might receive during a run. Pull it up just snug, lock it in place with a nut using a wrench to hold the bolt in its snug position and tightening the nut with another wrench.

This will give the average race car builder substantial information so that if reasonable care is used he will not have any trouble passing a pre-race inspection on his adapter hook-up. Naturally, we assume that the builder's car has axles suitable for mounting adapters. One or two of the manufacturers are producing axles to replace those used when the car is run on cable. Those that I have seen of this type are not altogether suitable, but can be made so with a little ingenuity, providing some means of locking the adapter bolts in position on all four bearings. This is a *must,* and anyone attempting to run his car without these locking devices is asking for lots of trouble. Frankly, I know of no easier way to wind up a race with nothing but a basketful of parts, as to attempt a run with the studs merely screwed into a casting and letting vibration do its dirty work!

Wouldn't it be nice if some bright young lad would dream up an idea of how to fasten those red hot 120-MPH cable jobs onto a rail so all could see how much drag there actually is from the bearings and what effect it has on the speed of the car?



SOUTHERN REGIONALS AT MONROE

By BILL WUNDERLICH

THE Monroe Club finally signed a peace treaty with the weatherman who provided a perfect day for the Southern Regional AMRCA Meet at Monroe, Louisiana, on July 6th. With the kind of weather that makes you refer to this part of the country as the "Sunny South" and with nearly three dozen cars entered from Louisiana, Alabama, Georgia, Texas, Missouri and Illinois, the spectators and contestants were treated to an assortment of speed and thrills.

Early arrivals in Monroe put their cars through trial runs on Saturday and then settled down to the serious business of making necessary changes to suit the track and weather conditions and preparing for the stiff competition indicated by the time trials. The trophies, donated by AMRCA, were on display and served to spur interest and stimulate sharp competition among the car owners. Each entrant made mental note of the awards and then "dug in" for an extra special effort to take home a piece of the hardware. There were trophies for the first eight places in both the Proto and Spur Classes for the ¼-mile event and three in each Class of the 1-mile event. Two heats were run for the shorter distance while one heat served to determine winners in the 1-mile stretch.

"Senator Claghorn" (Fran Brennan) was particularly proud that his good friend Glen Mathews, AMRCA President, decided to come South and enter his cars in the Monroe Races. Glen brought Mrs. Mathews and Frank along with him and, just in passing, let it be recorded that the Mathews family did fine for themselves in taking trophies back to Rockford.

Paul Allred represented the Mobile

(*Continued on page 39*)

Photo by Wunderlich

Pit scene taken at the Southern Regionals, Monroe, La.

RECORDS FALL AT WAUKEGAN

By JOHN MAYFIELD

DESPITE a cloudy sky and a threatening day, the only thing that fell at the Midwest Regionals was a couple of records. Record runs were made by two boys from the Waukegan Club. John Brake, who has been coming up the long hard way, set a National speed record of 110:15 mph (third spot for the day), and Warren Borden turned out a sweet 121.46 mph in the quarter and raised his own one-half mile record to 120.89. Borden is running a car of his own design (the flying disc).

The entry list was smaller than expected (65 cars) but the speeds were high and the boys put on a swell race. It was

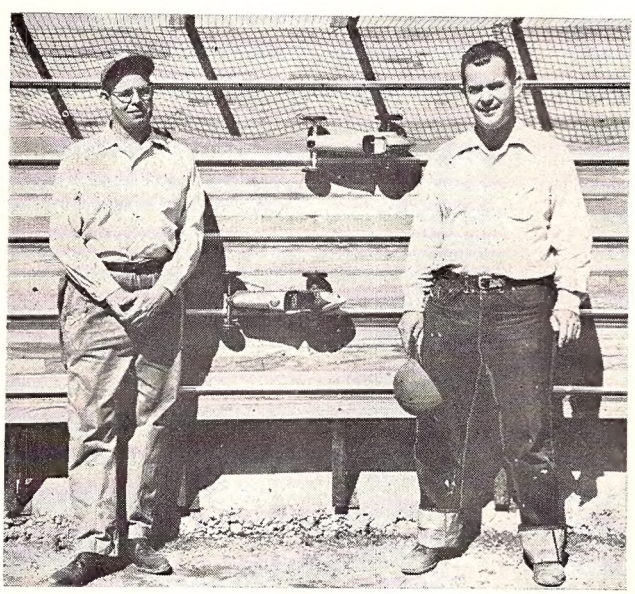
(*Continued on page 43*)

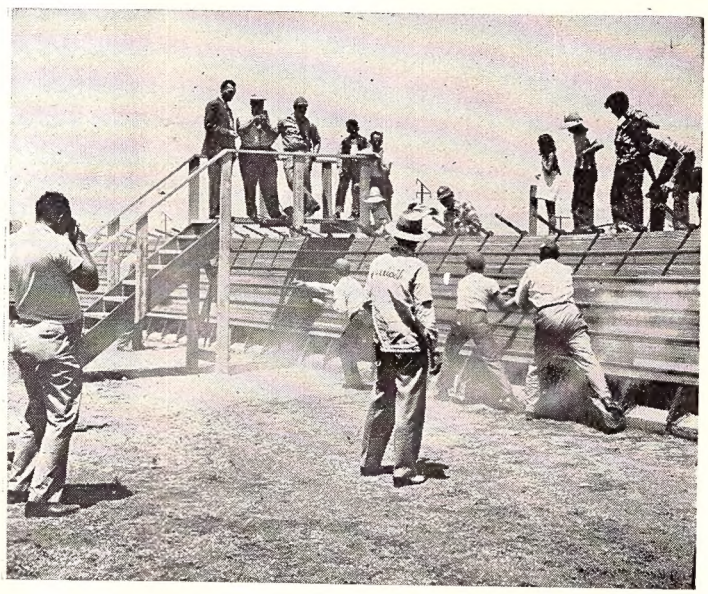
NEW RAIL RECORD PACES WESTERN REGIONALS

By WOODY WOODWARD

WESTERN Regionals for both Rail and Cable were held at the Hornet Hobbyland in Fresno, California, on July 4-5-6 for the Rail events and July 5 & 6 for the Cable. In the cable events, 13 spurs, 22 protos and 3 hot rods were entered, with 25 cars competing in the rail side of the picture. Dick McCoy knocked out a new rail record for a 1/12th mile track with the amazing speed of 95.13 mph! Norb Janssen set a new record in the hot rod class with 98.46 mph.

This rail track here at Fresno is the fastest we know of in the world and Ray





Photos by Hendricks

Highlight of the Western Regionals was the new Rail Record set on this track by Dick McCoy with 95.13 mph. At the left is "Woody" Woodward, former AMRCA President, in charge of the rail races, and Ray Snow, the man responsible for this fast track. Right—Real live action takes place, as the boys get off to a fast start.

Snow has worked many long hours making this race possible, even to the extent of not having a car of his own to race. Next race he'll be in their pitching! Curly Glover qualified at 92.21 but his rail adapter came off later on, his car hitting H. Fox's car and was smashed beyond repair. It was really a fast job. The only other accident came when Gil Donaldson's spur came off the bottom rail caused by his adapters being improperly fastened to the rail, breaking the photo cell light. Timing was done with a photo cell made by Greg Beard of Haddonfield, N. J., and worked perfectly for all qualifying runs. Timing equipment was furnished by Dick Hulse of Acme Novelties.

The rail race was run off by Woodward with the assistance of Mrs. Snow, Mrs. Suddeth and Mrs. Art Brown. For the amount of experience, it went off surprisingly well and trophies were awarded by 5:30 p.m. Lloyd Moller ran off the cable races and did a fine job, also helping Mrs. Snow in running the qualifying races on the rails.

With "Woody" on the stand trying to run a rail race for the first time, Curly Glover ran his Pacemaker and Billy and Frank Vales ran his Dooling (*all good chauffeurs*). At 12:00 on July 6th, the Juniors had a match race, Billy Snow racing the Thompson Special 12c from Chicago and Bill Vales racing the Dooling Hornet of Woody's. In Chicago last year, Thompson ran away from the Dooling but this year the Dooling won. Full results of Cable and Rail Events follow:

SPUR GEAR CABLE

	MPH
D. McCoy, McCoy-McCoy	112.92
J. Grijalva, McCoy-Hornet	111.80
G. Devers, McCoy-McCoy	111.38
C. Lamb, McCoy-McCoy	110.56
J. Grijalva, McCoy-Dooling	108.82
L. Owens, McCoy-McCoy	107.78
N. Graves, V-Car-Hornet	106.88
R. Vanderhoff, McCoy-McCoy	106.38
S. Aleshire, Aleshire-Dooling	104.40
E. Chaney, McCoy-Hornet	103.56
F. Vales, V-Car-Hornet	102.27
E. Filippetti, McCoy-McCoy	101.92

HOT ROD CABLE

N. Janssen, McCoy-Hornet	98.46
H. Hendricks, Roadrunner-McCoy	91.93

PROTO CABLE

A. Poore, Own-Dooling	110.97
G. Teasdale, Own-Dooling	108.82
D. McCoy, Own-McCoy	108.17
D. McCoy, Own-McCoy	107.27
R. Torrey, Invader-McCoy	106.63
D. Shawver, Invader-McCoy	105.63
H. Suddeth, Pacemaker-Hornet	105.38
C. Trager, Dooling-Dooling	103.09
S. Street, Invader-McCoy	100.33
D. Springer, Invader-Hornet	99.56
J. Werts, Invader-McCoy	97.82
C. Grover, Own-McCoy	92.97
E. Hutton, Own-McCoy	91.93
M. Martin, P-3-Hornet	91.93
R. Whitmer, Supersonic-Hornet	91.83
G. Teasdale, Dooling-Hornet	90.72
C. Newal, Dooling-Hornet	89.10
H. Hendricks, Invader-Hornet	88.06
W. Romley, Pacemaker-Hornet	87.71
W. Cave, Own-Cobra	87.37

RAIL RACES

Qualifying	MPH	Total points
D. McCoy, Own-McCoy	95.13	190
C. Glover, Own-McCoy	92.21	50
McCoy-Lamb, Invader-McCoy	91.00	160
H. Suddeth, Pacemaker-Hornet	90.00	70
N. Janssen, Dooling-Dooling	89.19	35
D. Tergion, Dooling-Hornet	88.23	30
C. Lamb, Own-McCoy	87.12	80
W. Woodward, Pacemaker-Hornet	86.45	55
J. Papina, P-3-Hornet	82.11	80
B. Vales, Dooling-Hornet	81.37	85
E. Filippetti, P-3-Hornet	81.30	90
J. Papina, P-3-Hornet	80.86	55
J. Grijalva, Dooling-Hornet	80.42	15
R. Imhoff, Pacemaker-Hornet	7985.	50
D. Springer, Dooling-Hornet	79.85	25
A. Silva, Donaldson-Special	79.36	25
D. Hulse, Dooling-Hornet	78.36	20
L. Thompson, Dooling-Hornet	78.12	25
J. Tindell, Own-Cobra	77.31	15
B. Snow, Thompson Spc.-Hornet	77.05	40
H. S. Fox, Supersonic-Hornet	76.53	15
G. Donaldson, Spur-Hornet	76.27	*15
A. Brown, Richter-Hornet	74.68	**20

* Spur gear. ** Streamliner

RAIL FINALS

Rail No.	Winning Position
1. Dick McCoy	First
2. Filippitti	Third
3. McCoy-Lamb	Fourth
4. Papina	Fiftl
5. Lamb	Second

(*There were five rails finished and all rails very smooth.*)

FEATURE RAIL RACE

(For fastest qualifying cars)

Rail No.	Winning Position
1. Dick McCoy-Speed 82.19	First
2. McCoy-Lamb	Fourth
3. H. L. Suddeth	Third
4. Lamb	Second
5. Woodward	Fifth

EASTERN REGIONALS AT LONG ISLAND

Eastern Regionals were successfully run off at the Long Island Club track located at East Meadows, L. I. Speeds were high but failed to match the amazing marks set in the Midwest. Three heats were run in both the Spur and Proto Classes, for the ¼-mile.

SPUR GEAR

Club	MPH
1. Fred Luning, Long Island	114.06
2. Bob Smith, Stratford, Conn.	112.07
3. Johnny Jaciow, Springfield, Mass.	111.38
4. Joe Gorsky, Long Island	108.04
5. Ed. Rogers, Bronx, N. Y.	107.78
6. Frank Pogachnik, Long Island	107.39
7. Frank Luning, Long Island	106.76
8. Frank Valeo, Long Island	106.50
9. Jack Mayhew	106.50
10. Bill English, Long Island	106.13

PROTO

1. Comdr. E. L. Luke, Washington, D. C.	100.89
2. Frank Wolf, Long Island	98.79
3. Phil Eberhardt, Long Island	98.25
4. Bill Flinn, Brooklyn	95.94
5. Bill Wellenberg, Long Island	95.84
6. Ted Jacobs, Bronx, N. Y.	95.74
7. Frank Luning, Long Island	95.33
8. Rudy Winscher, Long Island	94.43
9. Dick Deus, Long Island	94.43
10. Bob Schupbach, Long Island	94.24

CHICAGO VISITS MILWAUKEE

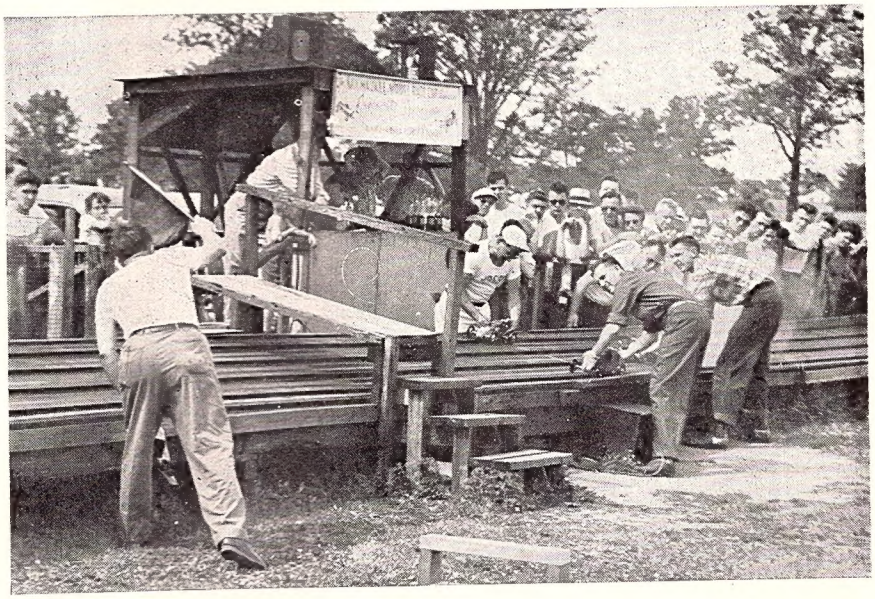
MILWAUKEE played host to all Mid-Central Rail Clubs on July 4th, 5th & 6th, with boys from the Badger Club, South Bend and Chicago competing for various prizes.

New rail records were established by the writer's 3B Proto car, hornet powered, Riff-Pawlikowski design. This little bug out of 25 starts has broken all rail records on a 1/16th mile track on nine different occasions. Fastest runs of the day were: ¼-mile qualifying run at 10:85 for 82.94 MPH; ½-mile from a standing start at 21:46 for 83.87 MPH; 1-mile from standing start at 45:80 for 78.60 MPH. The fastest lap ever recorded was 2:55 for 88.23 MPH. . . . *Frank Pawlikowski.*

ARMCA SANCTIONED MEETS FOR 1947 SEASON

Aug. 3	Harvey, Illinois
Aug. 10	Forest City, Cleveland, O.
Aug. 10	Kankakee, Illinois
Aug. 8, 9 & 10	**Rail Nationals, Chicago, Illinois.**
Aug. 14, 15, 16 & 17	**Cable Nationals, Indianapolis, Indiana**
Aug. 17	Hartford City, Indiana
Aug. 17	Long Island, N. Y.
Aug. 24	Bakersfield, California
Aug. 24	Harvey, Illinois
Aug. 27	Bakersfield, Calif.
Aug. 30, 31	Detroit, Mich. (Midwestern Champ.)
Sept. 1	Harold Loose Memorial Race, Long Island, N. Y.
Aug. 31, Sept. 1	Salina, Kansas
Sept. 7	Boston, Mass.
Sept. 7	Lafayette, Indiana (All-Proto)
Sept. 14	Peoria, Illinois
Sept. 20 & 21	Atlanta, Georgia (Southern Championships)
Sept. 21	Detroit, Mich.
Sept. 28	Bakersfield, California
Sept. 28	New Castle, Indiana
Oct. 5	Detroit, Mich.
Oct. 11, 12	San Francisco, California
Oct. 19	Long Island, N. Y.
Nov. 11	Monroe, La. (2nd Annual Classic)

Above dates and locations are subject to change by request of Clubs concerned.



At the starting line at the Milwaukee Rail Track. Elmer Reimer acts as starter.

AMRCA NATIONALS

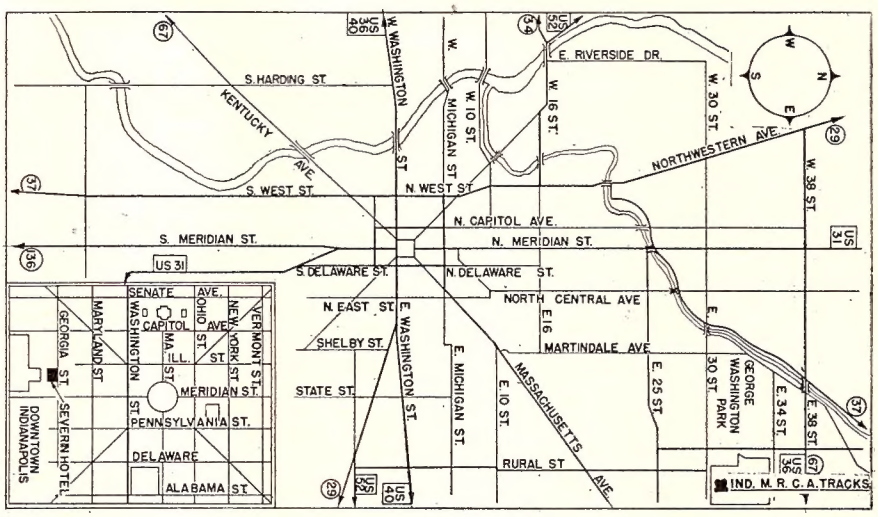
HERE'S a last minute reminder to take in your two biggest events of the racing year—the AMRCA Rail and Cable Nationals. This year your Rail events will take place again at Chicago as outlined in last month's CRAFTSMAN on August 8th, 9th and 10th. Scene of action will be the famous Chicago Midwest Rail Track located at Downers Grove, Ill. We speak of the word *action* with emphasis, bearing in mind the new record recently established by Dick McCoy at the Western Regionals, July 6th. Dick knocked out a neat 95.13 mph for the quarter mile using a modified Invader car on a 1/12 mile track.

Just one week following the Chicago Races, racing fans from all over the country will gather at Indianapolis, Ind., August 14th through the 17th to compete for cable honors. The Indianapolis Miniature Race Car Association will be host club for the 1947 Nationals and have just completed two fine concrete tracks on which to hold these championship races. These tracks are located in George Washington Park, 30th & Rural Streets, in the city of Indianapolis. A map is shown for your convenience.

Headquarters for the National Convention is Severin Hotel, located at Illinois, Georgia & McCrea Streets. For any reservations or information, contact L. E. Wallace, 3541 N. Temple Ave., Indianapolis 18, Ind.

Events will be run for 60-A (Prototype) and 60-C (Spur Gear) Classes only, with 120 beautiful trophies awarded to winners. An entry fee of $3.00 per car will be charged. Proxy cars will be run by the proxy committee unless the car is accompanied by a letter from the owner which designates some particular person to operate his car. Car owner must also send along his paid up AMRCA dues card in order to enter the race. No deviation from this rule will be permitted.

Schedule of events will be as follows: Thursday, Aug. 14th, from 9 a.m. to 6 p.m., 1/4-Mile Heats for both Classes; AMRCA Officers and Directors Meeting at 8 p.m.; Friday, Aug. 15th, from 9 a.m. to 6 p.m., 1/2-Mile Heats for both Classes; AMRCA Annual Meeting at 8 p.m.; Saturday, Aug. 16th, from 9 a.m. to 6 p.m., 1-Mile Heats for both Classes; Convention Banquet at 8 p.m.; Sunday, Aug. 17th, Final Championship Races at 9 a.m.



Study this map carefully for full directions on reaching the Indianapolis M. R. C. A. tracks, scene of the AMRCA Cable Nationals. They are located in Geo. Washington Park, 30th and Rural St. To reach tracks from downtown area, go North on Meridian St. to 30th, East on 30th to Rural (Park Entrance), enter Park and follow markers to track. Do not attempt to reach tracks by crossing town via Rural St. (not a through street)

SUSQUEHANNA HOTRODS

A NEW model racing club, namely the "Susquehanna Hotrods," has been formed in Harrisburg, Pa., with a group of 30 active members forming the backbone of their club. The boys have just completed a new 1/24th mile concrete track at Willow Mills Amusement Park, located roughly 10 miles west of Harrisburg.

KANSAS CITY TRACK DELAYED

THE boys out in Kansas City, Missouri, are really having a rough time getting their new 1/24th mile cable track completed. Due to excessive rain and weather conditions, it has been quite difficult to do the necessary grading and earth removal work which was required in the construction of a good track.

According to W. F. Kaiser, Secretary of the Kansas City Club, they intend to construct a 1/24th mile track with a 4"-thick concrete ribbon, four feet wide and reinforced with steel, following the pattern of several of the faster tracks which have recently been built.

NEW TRACK OPENS ON LONG ISLAND

HERE'S good news for all racing fans on eastern Long Island. A new club has been formed known as the S. C. A. R. S. (Suffolk County Auto Racing Society) and, according to their report, a new track was officially opened on July 4th. This construction was delayed with unusual weather conditions, cement strikes, etc.

All of us are familiar with the crowded conditions existing at the present Long Island track which is located at East Meadows. This should help considerably to relieve these unpleasant conditions. The new track is located at "Frank & Bob's," on Robinson Blvd., East Patchogue, L. I., a 1/24th mile cable job with hopes of an electric timing device and lights for night running late in the season.

Any new members will be welcomed and should contact "Flip" Hallock at Hallock's Hobby House during the week or at the track on Sundays.

BIG RACE PLANNED AT EUSTIS

THE Eustis M. R. C. A. of Eustis, Fla., has just applied to the AMRCA for a sanction on a race to be held on October 19th at their cable track. The race will consist of two heats each in Class 60C and 60A Spur and Proto; three heats if time permits. Trophies and other awards will be presented to the winners through at least 8th position. This race is also sanctioned by the Florida Race Car Association and points will be kept towards the State high point trophy.

Ed. Stone finally took permanent possession of the Ferran Trophy given to the high point winner in proto within the Eustis Club. This trophy was awarded each three months to the member having the highest total points in proto. Stone won this trophy three times in succession; however, Al Butts, one of the newer members, really gave him a battle during the last three months period. In fact, the contest was so close that it ended up with both fellows having a total of 150 points. Even the run-off on the following Sunday was a fight to the finish, with Ed finally edging out Al in the third heat at 94.73.

The Brown's Hardware Co. Trophy for the same event in Spur Gear is really making the rounds. Pop Baker won this trophy for the first three months, then Forrest LaRoe took it away from him on the second period. This last time, Pop took possession of it again. Several new cars have been purchased and Bill Londergan has taken over the Igou car and is planning to give Baker and LaRoe a real fight for this trophy from now on.

The boys want all of you race car fan(atic)s to know right now that the Eustis Club will be putting on the Second Annual Mid-Winter Open Race in February, not the same as last year but *bigger* and *better!*

SALINA, KANSAS REPORTING

By JOE ADDISON

SOME of the boys who were running out in front have taken a little back seat and the dirt eaters have somewhat come to the front. In fact, remarks indicate there might be a few major overhaul jobs going on before long! The speed list will tell as much as words. But as far as the Club is concerned, it is perhaps in the most healthy condition it has ever experienced. "Pappy" King has the old iron out and going again with a new motor, so he will need to break his baby in before hitting the high spot on the field. Ben Smith was about ready to junk it when he finally got the "job" to cookin' and seems to be right contented. We hear "Corky" St. Clair paid the new mechanic a bonus to get the car over the century mark.

The Salina Club is now operating full force on their new Thomas Park track and are glad to report they have full electrical timing with 1/100th second equipment. There is also plenty of shade, rest rooms and picnic grounds, so we are ready to be host to anyone wishing to drop in.

The boys also announce their open race to be held August 31st and September 1st, both for Spur and Proto cars of ¼ and ½-mile events. This is an AMRCA sanctioned race and a special committee will take care of all proxy cars. Everyone will be most welcome to attend in person. Any inquiries should be forwarded to St. Clair's Hobby Shop, Salina, Kansas. Entry fee will be $2.00 in each class.

Results of racing for past four weeks follow:

SPUR GEAR (June 15th)	MPH
A. Goedde, McCoy-Hornet	104.65
J. Addison, McCoy-Hornet	102.73
C. St. Clair, Mathews-McCoy	101.58
F. King, McCoy-Hornet	94.93
B. Smith, McCoy-Hornet	N.T.

PROTO (June 15th)	
B. St. Clair, Pacemaker-Hornet	94.93
B. Preston, Dooling-McCoy	87.37
B. Leiker, Dooling-McCoy	81.52

SPUR GEAR (June 22nd)	
A. Goedde, McCoy-Hornet	104.52
J. Addison, McCoy-Hornet	103.44
E. Vernon, McCoy-Hornet	103.44
C. Hedges, McCoy-McCoy	95.74
F. Kline, McCoy-Hornet	94.73

PROTO (June 22nd)	
J. Smith, Dooling-Hornet	81.36

SPUR GEAR (June 29th)	
E. Vernon, McCoy-Hornet	103.56
A. Goedde, McCoy-Hornet	102.85
C. St. Clair, Mathews-McCoy	100.55
B. Smith, McCoy-Hornet	95.94
C. McCullam, McCoy-Hornet	90.90

PROTO (June 29th)	
B. Preston, Dooling-McCoy	87.46
J. Smith, Dooling-Hornet	85.71

SPUR GEAR (July 6th)	
R. Goedde, McCoy-Hornet	103.68
B. Smith, McCoy-Hornet	103.09
J. Addison, McCoy-Hornet	101.01
E. Vernon, McCoy-Hornet	101.01
C. Hayes, McCoy-Hornet	99.88
A. Goedde, McCoy-Hornet	58.67

PROTO (July 6th)	
J. Smith, Dooling-Hornet	84.90
B. Leiker, Dooling-Hornet	81.81

Top—Winners of the three high place Dedication Day Cups at Reading, Pa. Left: Joe Waldman, 1st at 9.7 sec; Bob Hafer, 2nd at 9.8 sec.; Francis Wolf being congratulated on 3rd place time of 9.9 sec. by Club President, Bill Katz. Lower—Bill Hahn makes use of Maytag washing machine motor used as starter. The new track has not yet been wired for electricity.

HARVEY TRACK NOW UNDER WAY

THE Harvey Club of Harvey, Ill., is happy to report that their new track is now under way. Cement is being poured and the boys will soon be putting up fence, so it shouldn't be too long before they are running on their new track. They intend to have it in fine shape for their sanctioned race coming up on August 24th. The new track is located at 167th Street and Kedzie at the Rubinkam Airport in the town of Markham, one of Chicago's southwest suburbs. There are signs on all nearby highways pointing to the Airport, so it should not be difficult for anyone to find the track. Visitors will always be welcome on Sunday afternoons. It was recently voted by the members to request non-members to pay a fee of $1.00 per car in order to help pay for this new track. With the Club's membership dropping to eleven active members, it was necessary to obtain outside help in order to finance the building of the track.

Harvey is most happy to welcome as a new member Bob Mulhall, formerly of Tuckahoe, N. Y., who has recently moved to Chicago. Bob is an old timer at this game and at present is the National Cable Director of the AMRCA. . . . *"Hap" Wyckoff.*

MIGHTY MIDGETS DEDICATE NEW TRACK

THE Mighty Midgets of Reading, Pa., opened their new 1/24th mile cable track on June 30th, located just outside of the Reading Fair Grounds on a state highway, very accessible to entire metropolitan Reading.

In spite of almost daily rains, the high cost of building materials and the war time loss of some of its old regulars, the Mighty Midgets staged a comeback on their new track at this race Winners were all grouped at a very nearly even 90 MPH. Better speeds are looked for, however, when the boys get used to the track and get their gas buggies limbered up after a long winter layover.

If you care to participate in regular races held on this track, get in touch with the Club Secretary, William Hahn, 639 Gordon St., Reading, Pa.

MIDGETS ROAR IN TEXAS

THE McAllen Club of McAllen, Texas, are now seriously engaged in midget car racing on their new ¼-mile cable track. The boys race every Sunday from 3:30 to 6 p. m. all during the summer months. The track is sponsored by Mr. Harpo Williams and Mr. Alden Morse, the Club consisting of seven members at the present time.

Race results for their opening race on June 30th follow:

SPUR GEAR (¼- mile)	MPH
Alden Morse, McCoy-Hornet	100
R. G. Temple, McCoy-McCoy	85

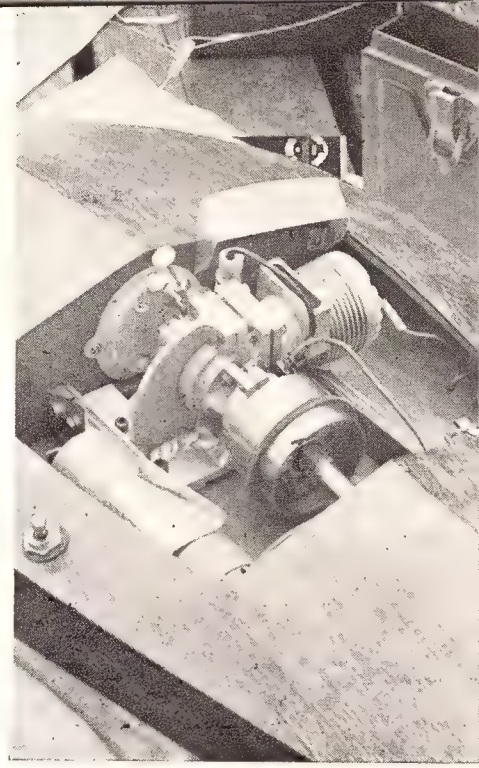
PROTO	
Bob Anderson, Own car—Own engine	90
Bob Kessler, McCoy-McCoy	75
Harpo Williams, Dooling-McCoy	40
Jake Moon, Dooling-McCoy	35

HOT ROD	
Harold Dimick, McCoy engine	75

"CAPITOL MEET" AT WASHINGTON

THE Washington M. R. C. A. is really going to town after opening their new 70-ft. cable track located in the Nation's capitol. Announcement has just been made of their "National Capitol Championship Race" which will be held at their track on Sept. 28th. The race is limited to Spur and Proto with ¼-mile heats only, racing to start at 10 a. m. The boys promise trophies to at least 10th spot in each class.

Advance notice of entry by post card will be appreciated to give the Club opportunity to plan the day's events. Further information as well as hotel reservations may be obtained by writing to R. E. Kirwan, 1219 Wisconsin Ave., N. W., Washington, D. C. Proxy cars may also be shipped to this address to be run by a carefully selected Race Committee.



Photos by Bob Graham

Meet some of the boys at the 7th Annual Baltimore Regatta held June 22nd: Standing, left—Kaufman, Philadelphia; Thorp, New York; W. Trimmer, Richmond, Va.; Traband, Philadelphia; Seavey, Philadelphia; Stuffers, Philadelphia. Kneeling, left—Sparr, Baltimore; Buress, Baltimore; Martens, Hampton, Va.; Hemple, Philadelphia; Darlington, Philadelphia; Clapp, Philadelphia; J. T. Sollers, Baltimore. At right is shown Class E (stock engine) boat built by Ralph McDermott of Philadelphia, featuring a horizontally mounted engine. Best speed was 44.12 mph.

Records Fall at Baltimore

By J. T. SOLLERS

TWO new E. M. P. B. C. records featured the day at the 7th Annual Regatta of the Baltimore Model Power Boat Club, held June 22nd, at Patterson Park Lake. The race was sanctioned by the Eastern Model Power Boat Circuit. Thirty-six boats were entered in all, the race starting promptly at 9:30 a.m.

It was a beautiful day—ideal for racing model power boats, clear and still. Every man turned his motors to their highest R.P.M., no holding them down just to finish the heat. During the entire day, everything moved along in perfect order, except when one of Balling's steam boats got loose and started across the course. Commodore Leutbecker (Baltimore Club) was on the pole, and in retrieving the steamer he got a good ducking—much to the amusement of the spectators.

Darlington's boat from Philadelphia insisted on making loops. In the second heat, it made one loop; third heat it made two loops and then stopped directly in front of him, pleasing the crowd in a big way. Adding zest to the day were the two Philadelphia boys in different classes, fighting it out. Harry Traband (Class D) in his second heat got his boat off to a fine start, giving it all it had and turned up 61.64 MPH. Ray Seavey (Class E) made a perfect run in his second heat, turning 61.64 MPH also. This really shows that the boys are fighting hard for that 100 MPH mark!

Ed Kalfus, of New York (Class D), got his boat away to a fine start, only to have it dunk after 1½ laps, bending his rod. It was broken when he tried to straighten it out, putting his boat out of commission for the day. J. M. Taylor came in from Ohio with a beautiful 4-cycle Class C job but failed to get it started. *Better luck next time, Taylor!* Roy Buress' Class D boat (Baltimore Club) finished its heat and then turned a flip in the air, going into the water stern first. It came up, still running and mad as a hornet, not knowing which way to go and gave the pole man a merry chase.

When Les Skuhr (Baltimore Club) was tuning up his motor, his shaft whipped out, tearing out the bottom of his boat and putting him out for the day. Tuck Fuqua (Virginia Club) had tough luck and failed to make a single heat. We were glad to see R. Meier, of Washington, back in the game, despite the fact he ran into trouble and made no time. J. B. Thorp, of New York, was with the boys again and went home with top honors in his class. Harry Traband, of Philadelphia (Class D), established a new E. M. P. B. C. record of 61.64 MPH, as well as Ray Seavey, also of Philly, with a new record of 61.64 MPH in Class E.

Bob Graham was on hand as usual with his camera and boat, a new boat at that and not bad! Bob turned up 47.07 MPH when he was not taking shots of the action taking place about him. He never fails to get real action. All in all, it was a perfect day—real fun for those interested in model power boat racing. We of the Baltimore Club thank all those who attended this meet and helped make it a success. Thanks, too, to Mrs. Traband and Mrs. Kaufman (Philadelphia) for assistance in timing, to Mr. Kellar (Baltimore) for handling the score board, records and calling boats to line, and to Joe Sparr (Baltimore) for his comments on the mike—*a good job!* Results follow:

CLASS A

	MPH
1. Ben Kaufman, Philadelphia	54.88
2. Joe Sparr, Baltimore	48.91
3. J. Hemple, Philadelphia	39.13

CLASS B

1. J. B. Thorp, New York	53.57
2. W. C. Martens, Hampton, Va.	25.57

CLASS C

1. W. Trimmer, Richmond, Va.	51.72
2. R. J. Buress, Baltimore	46.39
3. J. T. Sollers, Baltimore	39.47

CLASS D

1. H. Traband, Philadelphia	61.64
2. J. Stuffer, Philadelphia	43.19
3. E. Clapp, Philadelphia	55.15

(did not run three heats)

CLASS E

1. Ray Seavey, Philadelphia	61.64
2. L. Darlington, Philadelphia	51.72
3. R. Buress, Baltimore	48.08

Photos by Bob Graham

Left—J. N. Taylor of Warren, Ohio, entered this Class C boat powered by a home-made 15 c.c. 4-cycle engine. A storage battery and starter motor with a belt drive was used for starting the engine. Right—Walter Trimmer of Richmond, Va., with his Class C first place winner with 1200 points and speed of 51.72 mph. This boat is the Eastern Circuit Class C record holder, a 2-cycle engine job with 15 c.c. cylinder capacity. Both engine and boat were made by Trimmer.

Photo by Bob Graham

Group of entries at the Baltimore Regatta

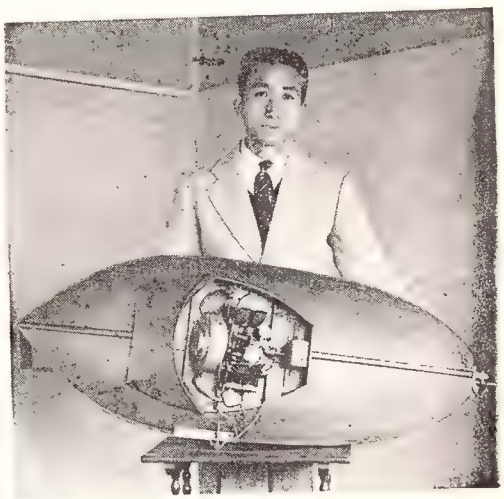
JAP BUILDER BUILDS 'EM BIG

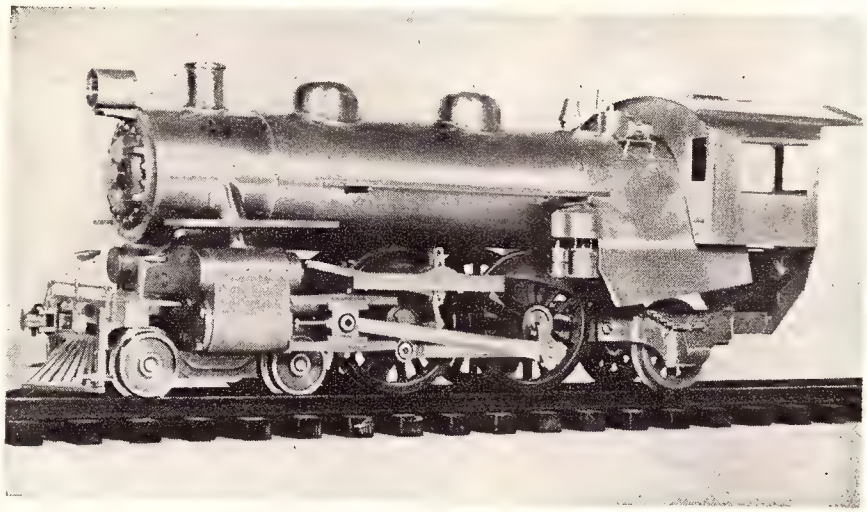
DESPITE the ravages of war and the turmoil that always follows, the Japanese still find time to continue their hobby activities, and in no small scale either. According to David L. Waddington, now stationed in Japan with our occupation forces, the boys over there are quite active in all branches of model building. He speaks in particular of Mr. Ito of Seijo Machi, Tokyo, with a long string of models to his credit, power boats in particular. Mr. Ito is shown with his Class A job, having a top speed of roughly 50 MPH. The hull is two-stepped, of planked mahogany and weighs 16 lbs. complete, powered with a four-cylinder engine which was entirely designed and machined by the builder.

Mr. Ito has been a model enthusiast since about 1919 and has built 20 models in that time, including two speedboats, two racing cars, three live steamers, several stationary engines, a steam driven airplane (*Waddington saw actual photos of this model*) and numerous O-gauge models, electrically driven. At present, he is constructing a 3½" gauge N. Y. C. Hudson live steamer, started since 1939. The loco has roller bearings on all driving axles, ball bearings on all idling axles, as well as main and side rods.

About twelve years ago, Ito raced extensively in Japan with a full size hydroplane and engine, both of his own construction. He also owns a small commercial machine shop where he has built outboard motors, commercially in peace time and for the Jap navy during the war.

This speedboat is powered by a four cylinder engine, designed and built by Mr. Ito of Tokyo, shown with his model.





Boston & Maine Atlantic

PART I

BY LEWIS AUSTIN

THE Boston & Maine Atlantic makes a fine companion engine for the Boston & Maine Mogul which you just completed. The Atlantic and Mogul types go together for their particular period of railroading just like the Hudson and Northern types go together now. The Atlantic type is strictly a passenger loco, just like the Hudson type is today and the Mogul was used as a dual purpose loco, as is the Northern type.

For a simple constructed and smooth running model, the Atlantic type beats them all. Its short wheelbase enables it to negotiate the sharp curves used on most model railroads and it does not look out of place pulling a short string of cars.

Start your construction by cutting out the frame sides from ⅛" thick brass. Solder the two sides together and drill and ream the ¼" diameter axle holes. The 3/32" holes for fastening the frame sides to the spacers may also be drilled at this time. All holes should be in line. After they are drilled and the frame sides cut out to shape shown on drawing, they can be heated and taken apart and then bent to the shape shown on top view of the trailer truck.

Spacers are made from ¼" thick brass. Note that those at the rear end of the frame are only 5/8" wide. The other spacers are all 13/16" wide. It may be possible to get ¼" by 13/16" brass stock so that it will only be necessary to cut off the spacers to their respective lengths. After the spacers are made, clamp the frame together with spacers in position. Now spot the holes in the spacers through the 3/32" holes in the frame sides. The frame is then taken apart and holes in the spacers drilled with a #50 drill and tapped 2-56. Assemble the frame with 2-56 screws and check axle holes for alignment. The screws may be loosened and the frame sides shifted until the axle holes line up. When everything is thus lined up properly, solder the joints of the frame to make certain it does not shift out of alignment later. The heads of the 2-56 screws are filed off after the frame is soldered.

The pilot beam is filed to shape from brass and soldered to the front end of the loco frame. File a notch in the underside of the pilot beam for mounting the coupler. The balance of the pilot is cut from 1/16" thick brass as shown. Templates are drawn full size, so you should experience no trouble. The section with the pilot bars is cut out and slotted with a hacksaw. The slots are then finished up with a small flat file. Bars are bent out to their correct angles. Note that the center bar is bent out at a sharp angle and that the angle of the bars get slighter as you get to the ends of the pilot. Make the bottom piece of the pilot and use it to check the angles of the pilot bars. When you have finished bending the pilot, file the ends of the bars so that the bottom piece will fit flat and square with the pilot itself.

The coupler pocket is simply a piece of 1/16" thick brass as shown, with a rectangular hole drilled and filed in it for the coupler. Steps are bent to shape from 1/64" thick sheet brass and soldered in place on the sides of the pilot. There are also two steps above the pilot beam. These are made from 1/64" thick sheet brass and soldered in position. The coupler lifting rod is bent from 1/32" brass wire and mounted through handrail posts on the pilot beam. This will complete the pilot.

The pilot truck comes next and is very simple to make. Use 1/32" thick sheet brass and cut it to shape. The axle holes and 3/16" slot can be put in the piece before it is bent. The other two pieces are cut out of 1/32" brass and soldered in place on the sides of the pilot. Wheels and axles may be purchased at a hobby store. My model is made for three-rail operation, so solid steel wheels were used. If you intend to use two-rail, it will be necessary to use insulated wheels. Mount your wheels on the pilot, putting washers between the wheels and pilot truck frame so that the truck will roll easily. It is then fastened to the frame with a 10-32 screw through the 3/16" slot. A coil spring is mounted on the screw between the truck and loco frame to prevent the truck from derailing.

The trailer truck of the prototype was mounted rigid with the frame. In other words, the truck did not swing from side to side as it does on modern engines. The trailer truck on this model, however, pivots up and down on two 2-56 screws and the truck frames are mounted some distance apart so that the wheels have plenty of side play for getting around curves. This makes it appear as though the truck is rigid, yet it still has as much freedom of movement as a conventional trailing truck.

Truck frame sides are cut to shape from 1/16" thick sheet brass and bent to the shape as shown. Drill and ream the hole in each frame side for the axle. Size of the hole will depend on the size of the axle that is furnished with the trailer wheels used. Spoked trailer wheels are available or you can turn your own wheels on a lathe and leave them solid. A strip of brass 1/16" thick by ½" wide is bent to fit between the back ends of the truck sides. This piece has to clear the loco frame. Fasten the truck sides to this piece with 2-56 screws.

The journal boxes are filed to shape from brass and soldered in place on the truck sides. Axle holes can now be drilled into the journals. Dummy springs are built up from 1/32" thick sheet brass. After the spring leaves are cut out, drill a #60 hole through the center of each one and rivet the spring leaves together. Bands of 1/64" sheet brass are then bent around the springs and soldered. The dummy springs may now be soldered to the truck sides directly on top of the journals. Shackles to fit the ends of the springs are simply bent from 1/16" brass rod and soldered in place. This completes the trailing truck, but do not mount it on the loco frame yet.

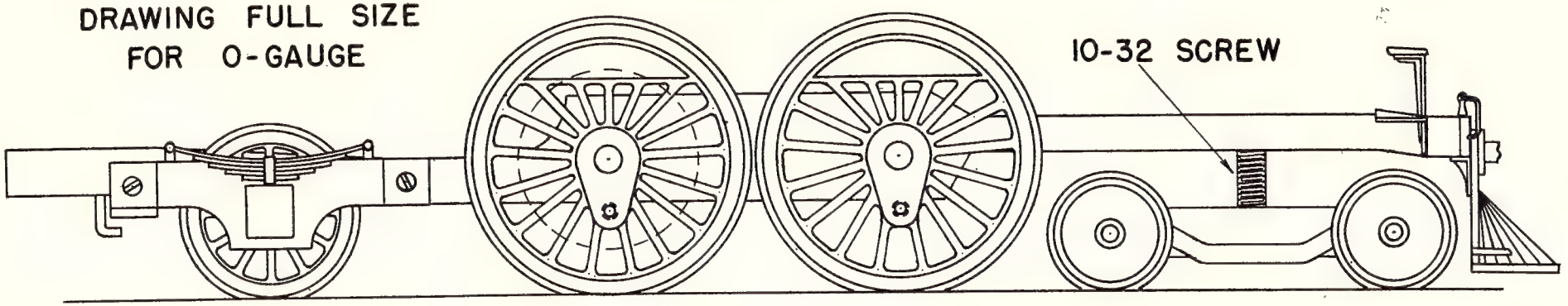
The drivers may be mounted next. You may either purchase castings for the drivers if you have a lathe or, if not, the finished drivers. Axles are made from ¼" drill rod and the ends turned to 3/16" diameter to form a shoulder for the drive wheels. The wheels will have to be pressed on the axles while the axles are in the loco frame. Make certain to mount the gear on the rear axle and put washers between the drivers and frame before pressing on the wheels.

Now the trailing truck can be mounted on the loco frame. Drill a 3/32" hole in the front end of each frame side and then drill and tap 2-56 holes in the loco frame to correspond. The truck is then held in place with 2-56 screws. Bend two "L" shaped pieces from 1/16" brass rod and solder them in holes drilled into the loco frame as shown on the drawing. The purpose of these pieces is to prevent the trailing truck from hanging down when the loco is lifted off the rails.

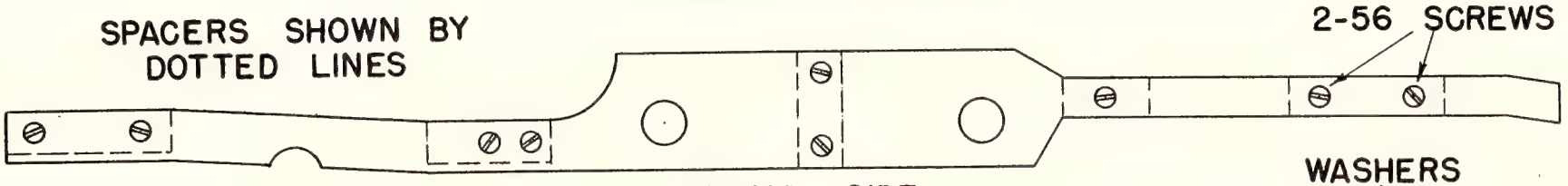
(To be continued.)

BOSTON AND MAINE ATLANTIC
O-GAUGE

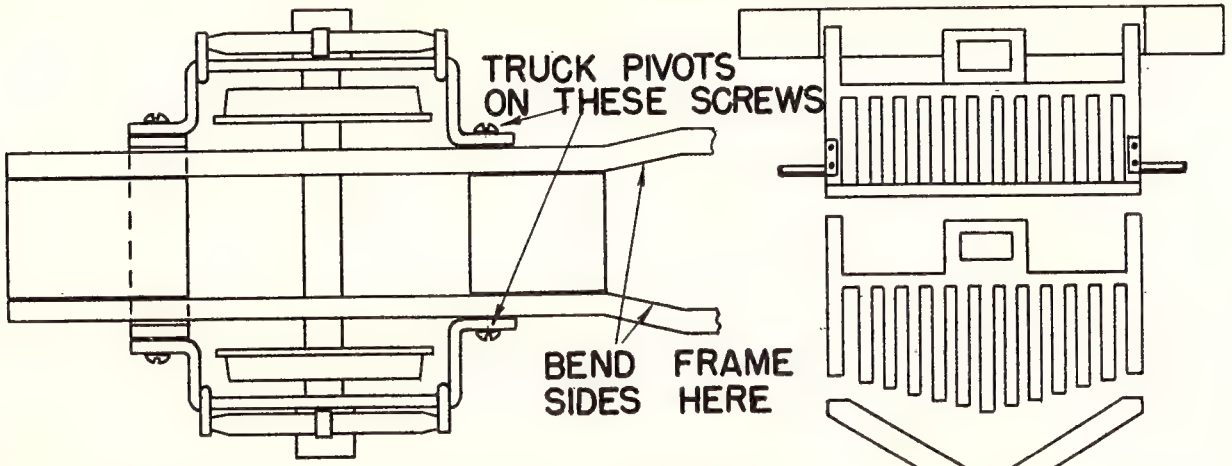
DRAWING FULL SIZE
FOR O-GAUGE



ASSEMBLED CHASSIS

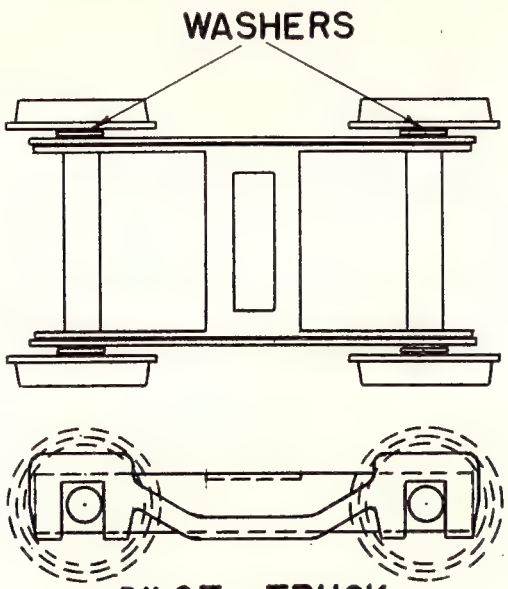


FRAME SIDE



TOP VIEW OF TRAILING TRUCK

PILOT DETAIL



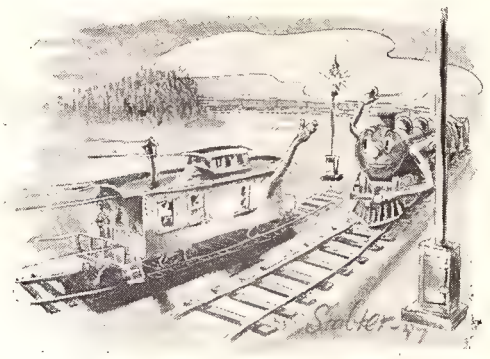
PILOT TRUCK

L. AUSTIN

Signal Control
for your Main Line

A Project Designed for Two-Rail DC Operation

By L. W. LAWRENCE



IS YOUR Master Control Board built yet? And your switches interlocked? Good! Now we can talk about the signal equipment for the main lines of your pike. But before starting, let's make a few general statements.

First, it is my belief that half the fun in model railroading is operating trains according to various types of instructions. These would include timetables, dispatcher's orders and signals—either "in the cab" or on a control panel. After all, in prototype practice, the engineer watches the signals along the way and obeys their command. Because we model fans cannot sit in the cab of our locomotives is no reason for not enjoying this phase of our hobby. Recalling my article on the master control board, you'll remember that it was divided up into *cabs*. Well, the signal equipment to be described here fits in with this cab idea.

Secondly, model pikes are becoming entirely too *automatic*. I once saw a complicated layout on which some twelve trains moved simultaneously, stopping and starting, loading and unloading, while all sorts of other animations occurred. The amazing part was that *one* switch set the entire thing going and it continued to go unattended until the switch was flicked off. Now I agree wholeheartedly the layout was fun to *watch* and astounding in its accomplishments. But to me, it just wasn't railroading—it was merely a tinker's contraption. Thus the signal equipment described here will not of itself prevent wrecks (although an additional leaf or two on the relay arm would allow complete automatic control of trains on the main line sections) but it will advise engineers of conditions along their route. It will be left up to the engineer to slow down or stop his train.

All of this discussion has no connection with the interlocking of switches and crossovers. The plans recently given for interlocking these units (May '47) fit in nicely with the signal equipment described here.

Equipment necessary for this type signal control can be divided into three categories: those parts of the mechanism located on the rolling stock; those located between the running rails; and those located on or behind the control board. Let's look at each part separately and then integrate them into a working unit. As in previous articles, specific names will be given to each part to simplify their description.

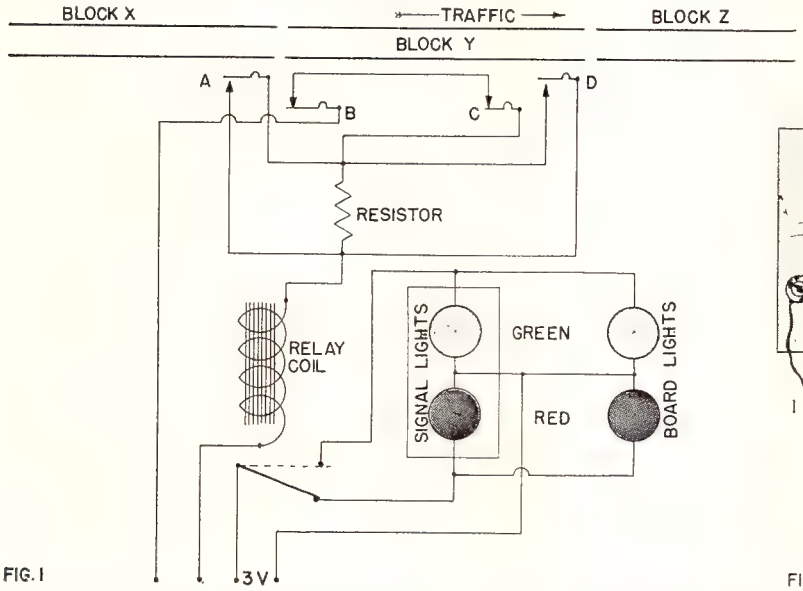


FIG. 1

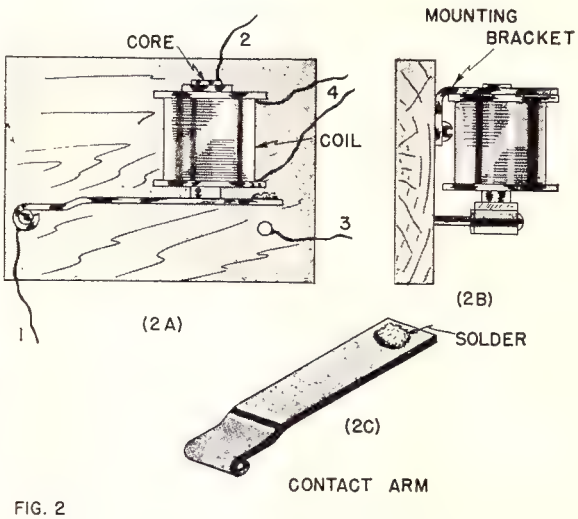


FIG. 2

Parts of the mechanism mounted on the rolling stock are shown in fig. 4. The part illustrated in fig. 4a will be called an *actuating pin*. Pictured here is the floor of a car (4) through which two rectangular slots (3) have been cut (see fig. 4c), one each side of the centerline. Through each slot is thrust a machine screw (1) after first passing through a piece of spring brass (2) humped as shown to provide tension. On the underside of the floor, the screw passes through a thin washer (8) and then through a strip of wood (5). A nut is finally attached and tightened just enough to squeeze the various layers of wood and metal lightly together. A drop of solder holds the nut set. Inserted into the wood strip (5) is a length of brass rod (7) rounded at the lower end. The actual length of the rod must be such that it will just clear the rail tops at switches and crossovers. Note that the diagram pictures the actuating pin on the right of the centerline. Obviously, this can be shifted to a similar position on the left of the centerline. Fig. 4d illustrates a simple tool which enables you to conveniently slip the actuating pin to the right or left *(may also be employed with certain types of automatic couplers)*. These actuating pins are installed on all cabooses, observation cars and locomotive tenders. If trains are sent onto main line trackage without cabooses, several cars should also be equipped, one of these being included at the end of any "crummy-less" train. If locomotives are sent out onto main lines alone, equip all tenders with two actuating pins in tandem.

Parts of the mechanism mounted between running rails are illustrated in fig. 3. Fig. 3a shows what we'll call the pressure-make contact type switch, while fig. 3b pictures a pressure-break contact type switch. Both types are fashioned from spring brass and bent so the hump extends a little higher than the rail head

even when depressed to close *(or open)* the circuit.

Pressure switches are located between running rails of each block, slightly to one side of centerline (fig. 3c). In this diagram, A and B are pressure-make contact type, with C and D of the pressure-break contact type. As shown, the pressure switches at the entrance to any block are to the right of the centerline; those at the block exit are to the left. This arrangement should be consistent throughout the main line trackage.

Parts of the mechanism mounted on the control board are all illustrated in figs. 1 & 2. One element of this division actually is located beside the entrance to each block; it is the signal light stand shown simply as two lamps in fig. 1. Note the relay and resistor in fig. 1. You will recall my aversion to the use of relays, but in this system they are quite necessary. Twenty-five cents or less per relay, however, is not too much money and that will be the average cost if you build your own according to the following plan.

Fig. 2 represents the solenoid taken from a secondhand door bell (junk dealers have plenty of these in which there may be one or two of these solenoids). It is mounted vertically, using the bracket which is already attached, onto a small block of wood. Terminal posts, not shown, should also be mounted on the block. Fig. 2c shows the relay arm, a strip of sheet metal *(iron)* with one end curled around forming a collar through which a lever post slips freely. On the other end, a small deposit of solder is fastened as a weight. When the arm is mounted on the block, a second post *(contact 3)* is so placed that when the arm rests on it there is a 3/8" clearance between the arm and solenoid core.

Electrical connections to the relay are as follows: Leads *4* energize the coil. Lead *1* is connected with lead *2* (taken directly from solenoid core) when the coil is juiced and with lead *3* when the coil is dead.

Such a relay, although somewhat crude compared to a manufactured product, accomplishes almost all the functions of a one leaf relay with the same degree of performance. I have used and am using several dozen such home made relays and have no complaints.

The resistor shown in fig. 1 cannot be given any ohm rating here since the resistance for each block will vary according to relay sensitivity and voltage imput. A variable resistor is recommended because changes in resistance may be necessary after installation is complete.

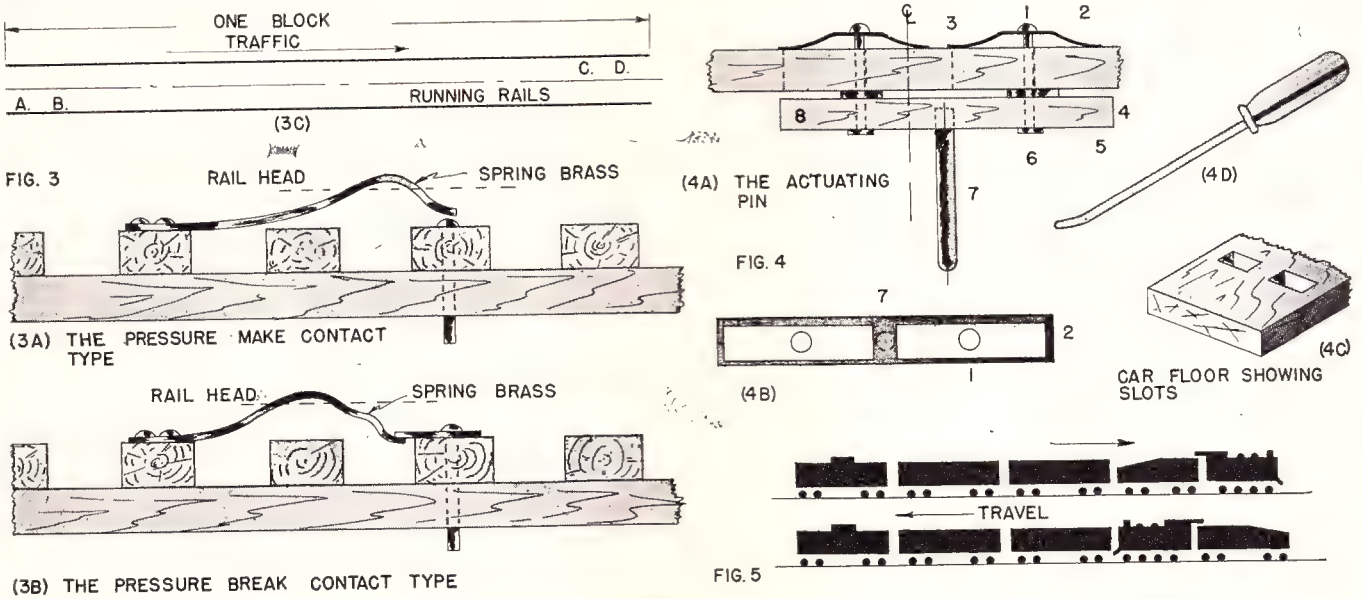
Panel board indicator lights may be mounted in two ways. They can be superimposed on a model track diagram showing the various track sections, or they can be mounted over the appropriate column of lights in each cab of the master control board. Such an installation as the latter would mimic the cab signals installed on many locomotives.

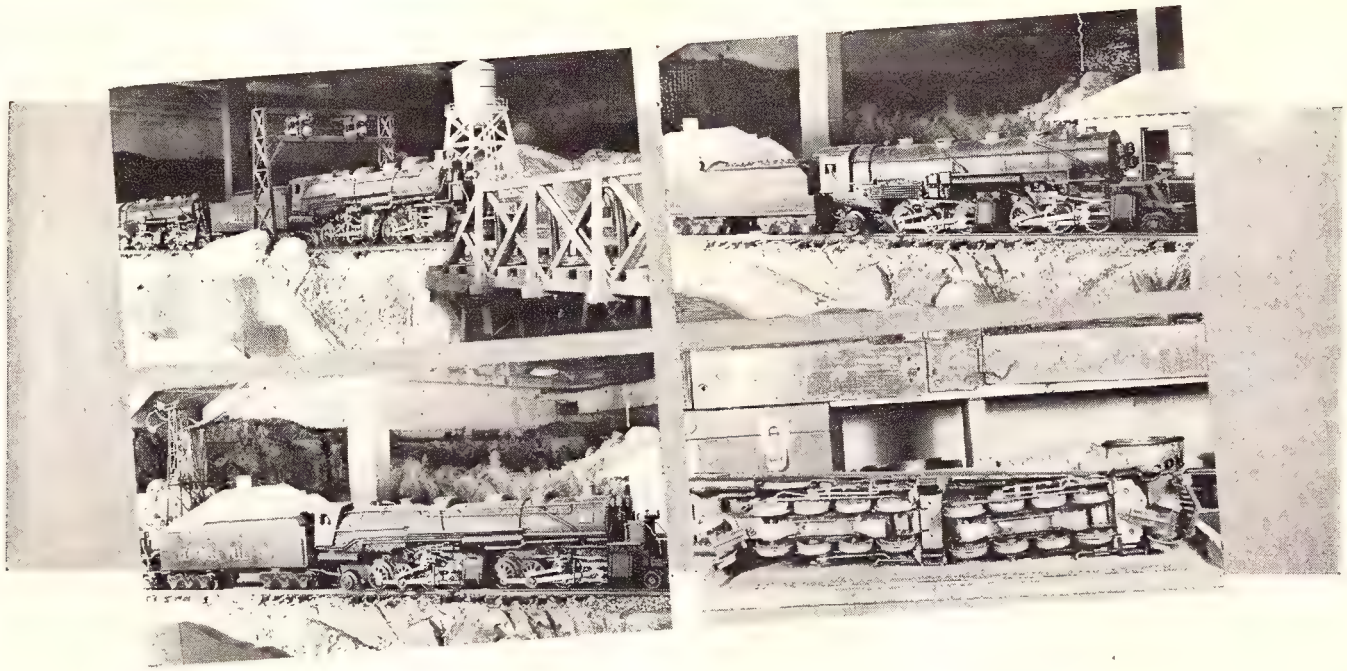
Now that we know the various parts of the signal system, let's put them all together and find out how they operate. A seven car way freight, fig. 5A, leaves the yards, the actuating pin beneath its tender set to the *right* of centerline and the actuating pin beneath the caboose set to the *left*. A car in the middle of string equipped with a pin has that pin set at neutral (over centerline). As this freight enters the main line, it also enters the first signal block *(for all practical purposes, the one in fig. 1-fig. 3C)* and as the locomotive tender passes over pressure switches A and B its actuating pin depresses them since the pin and switches are to right of centerline. Assuming the relay arm (fig. 1) is in position 1, being held there by the trickler current delivered through the resistor, the momentary depression of the pressure-make contact switch A has no effect. The momentary break in the circuit caused by the depression of the pressure-break contact switch B permits the relay arm to drop to position 2 changing the signal aspects from green to red. Although current is again flowing to the relay, it is insufficient to attract the arm from position 2, since it is flowing through the resistor. *This is the key point of the entire scheme.*

By now the caboose is rolling into the block, but since its actuating pin is to the left of the centerline while the switches are to the right, no change in signal aspect occurs. Similarly, when the locomotive tender passes through the exit of the block, nothing happens because the pressure switches are to the left of the centerline. When the caboose rolls over these switches (C and D), its actuating pin (set to the left) depresses both switches. Depression of switch C has no apparent effect. Depression of switch D however, allows a momentary flow of full relay voltage to reach the relay by shorting out the resistor. This shot of full power energizes the relay sufficiently to attract its arm from *position 1* to *position 2*. The trickler charge now holds the arm at *1* and the signal aspect is again green—*clear block*. This sequence of events happens in every block of the main line.

Sometime later, our way freight, having peddled its cars and collected new ones, must come back over these same blocks, i.e. against traffic. However, while down the line the locomotive ran a wye and got turned around (fig. 5b); the caboose didn't. Now, if we let such a train run through the blocks, it will fail to operate the signal equipment properly, because now the caboose *and* locomotive actuating pins are on the same side of the centerline. That is why the pins must be movable. We now take that little poker and reset the locomotive's pin on the correct side *(opposite caboose)*. Had the locomotive not turned around, no adjustments would have been necessary—simply back up and the switches would have tripped in the proper manner *(to cover against traffic movements, pressure switches A and C are installed)*.

Where this type signalling is employed, each train crew is held responsible for the setting of actuating pins. This takes place before the train leaves the yards.





POWER on the Centinela

By L. A. BARTHOLOMEW

AWAY out West, there is a large city so large that almost anywhere, be it desert, mountain or seashore, you will see signs that read *Los Angeles City Limits.* Los Angeles completely surrounds two smaller cities or towns, one of them being Hawthorne, which lies roughly some 15 miles southwest of the L. A. City Hall. The people of Hawthorne do not mind that the huge city has all but swallowed them. A small group of men living there have created that marvelous masterpiece of make-believe known as the Centinela Valley Railroad.

The railroad doesn't carry any of the nation's commerce, but nevertheless it is quite an important railroad in the lives of these men who created it. Being miniature, its trains would travel from one terminal to another all too quickly, so another illusion was created. We refer to their scale time clock whose gears have been changed to go eight times faster than an ordinary time clock and will go still faster when the district where Hawthorne is located is converted to 60 cycles from the existing 50 cycles. This conversion is slated to take place soon.

Most railroads pick the flattest lands possible on which to build their road, but the Centinela Valley System didn't have any choice, so its rails go up and over some really spectacular country. It is built in four levels in some places, and its trains swoop around curves built on spidery wooden trestles, high over the buildings and rocks below. A visiting model railroader, sitting in for an evening of entertainment, finds himself with sweating forehead, worrying over the timecard and hoping he will not be responsible for a wreck. The trains roar around the curves and dart into dark tunnels at high speed, only to reappear suddenly to the startled operator directly on the track in front of him!

He squints at the tiny number plate on the locomotive and finds it to be an extra which is to take siding at his town. He opens the gate to the passing track and has it all safe in a jiffy. *Nothing to it, he thinks,* and looks over the timecard for the next arrival. It's a freight from the opposite direction and it also is to take siding to wait for the "hot shot" varnish which is due in a matter of minutes. *Minutes, did you say?* Remember, the clock is going eight times as fast as a normal timepiece! The passenger train goes through like a comet without slackening speed. Its red marker lamps vanish into a tunnel and is gone.

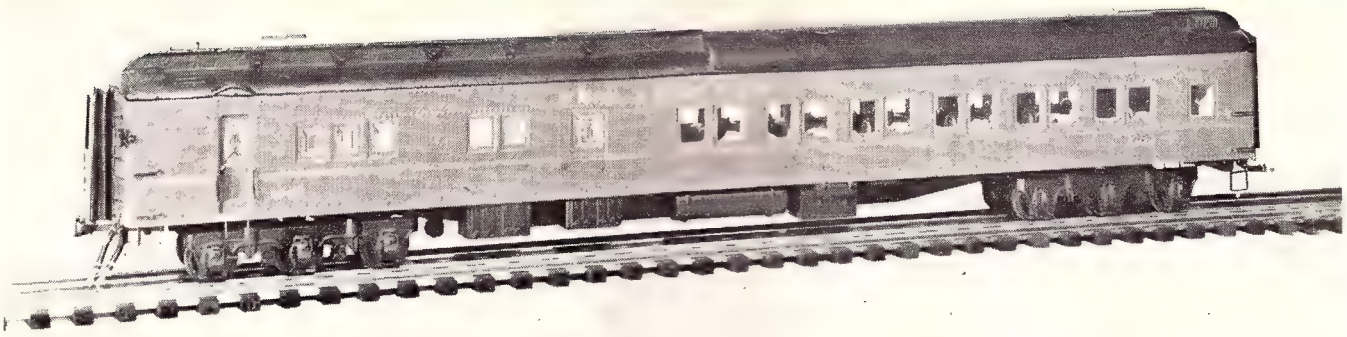
Now the through freight is due to arrive from the same direction as the passenger train did. The locomotive sticks its homely length out of the tunnel on his right and drags behind it a seemingly endless and motley string of freight cars. At first it is taken for a double header, but no—it's an articulated giant! But that can't be possible, for this road uses modified tinplate locomotives that have been changed in appearance to more resemble the prototypes they represent. It clanks closer, and—it's an articulated loco, all right!

This powerful brute can easily haul 35 or more heavily loaded freight cars up those two percent grades like they were feathers. The Centinela Valley R. R., faced with truck competition *(also make believe),* had to cut operating costs, so they developed the articulated behemoth by using the motor, gears and drive wheels of two small locomotives plus some extra drive wheels. A piece was added on to the original frame which was bored for an extra axle, longer side rods were made and the connecting rod lengthened. A new and much longer boiler was made of brass tubing. Scale air pumps purchased from a hobby dealer were installed on the front of the boiler,

Piping and handrails came next. No particular prototype was patterned. It's strictly a free lance job. An extra set of cylinders was put under the center of the boiler. Each set of drive wheels is pivoted separately. The center drivers are without flanges so that sharp curves can be more readily negotiated. A new cab was fabricated of sheet metal. Sand and steam domes in ¼" scale were purchased from a dealer, and these were mounted on the boiler in correct relation to each other. A new pilot was constructed of brass bar stock. Scale couplers were installed. The headlight was relocated over the leading truck. This makes for better visibility for the engineer. A rectifier was installed in the boiler for the Centinela System operates on DC and this makes the best type of reverse where double headers are often used. It is essential that all locomotives on a train reverse at the same time.

A new tender was built of sheet metal, of a size to go with the enlarged locomotive. As can be seen in the photos, it is big and massive and carries lots of coal for long hauls. Six-wheel trucks were installed to properly proportion it.

If you live in the West or are passing through Los Angeles, take a street car to Hawthorne and get off at the end of the line. Transfer to a bus and get off at 137th Place. Then walk one block west to a white house that has two brick pillars erected at the sidewalk entrance. On top of the pillars are two railroad switch lanterns. At the rear of the house is a low wooden building, 56 feet square, and inside is the greatest little railroad in the country. Timetable operation is made on each Thursday night. Stop in for an evening of thrills and fun. Visitors are welcome! And don't forget to sign the guest register—you'll marvel at the number who have registered before you!



YOUR NABOR'S PIKE

WANT THREE BUCKS?

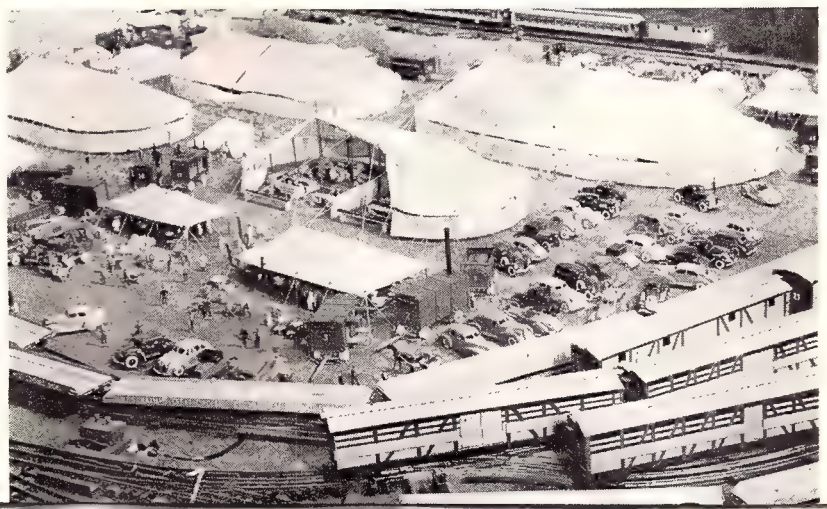
That's what we're paying for both photo and appropriate caption appearing on this page. Two bucks for each photo without caption. Here's a good chance to let your "nabor" see your work and make some easy money in the bargain. Photos are selected on a basis of good photography and reader interest. We do not limit you to some super-detailed model, so don't be bashful—your photo may be the next to appear on this page. Include all pertinent information regarding scale, gauge and all interesting facts. Send material to the Picture Editor, Model Craftsman, Ramsey, N. J. Photos will be returned on request.

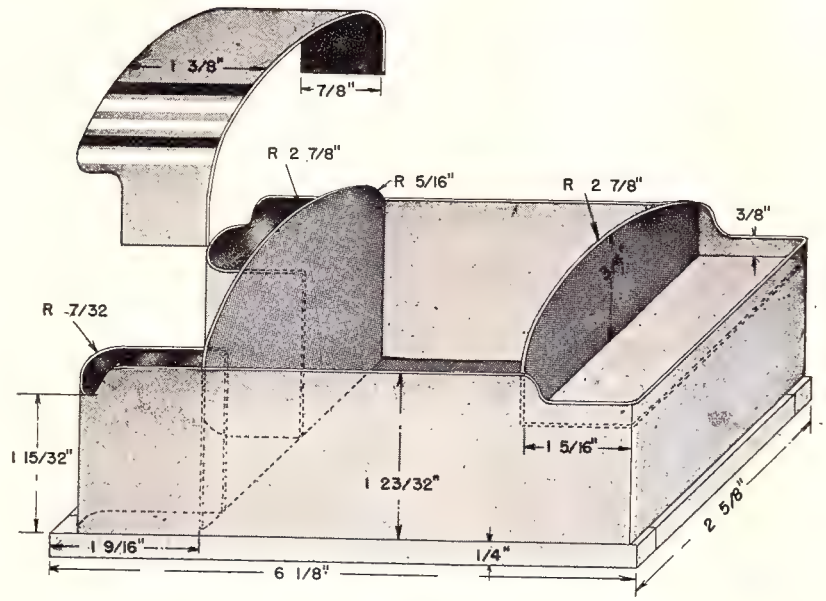
DE LUXE DINER built by Ray Boss, of New London, Conn., using commercial parts with a completely detailed free-lance interior. Inside walls are cream with dark red floor, all partitions, doors, etc., made of tinplate. His kitchen has ice box, double sink, stove with smoke hood, cover lifter and pokers. His wall cabinets have hooks for carrying pots and pans which Ray has spun on the lathe from tin can stock. Eleven tables fill the dining room quite nicely with chairs upholstered in maroon to match the carpet. All tables are completely equipped with napkins and cutlery. Match this if you can!

FLAG 'ER DOWN. The Gorre & Daphetid switcher #98 is flagged for orders at Gorre Station. The GD Line is a small branch road in HO scale, owned by John Allen, of Monterey, Calif. His road boasts of two engines, 24 freight and 3 passenger old timers. All locos and rolling stock have working lights, with both head and rear lights working on the #98 switcher. Gorre Station is completely detailed inside, built from scratch as are all other structures. At present, John has 60 feet of track with 6 switches, an overall area of 3½ x 6½ feet.

BUILT TO TAKE IT! David Commons, Los Angeles, California, wanted a layout that all the kids in his neighborhood could enjoy—a layout where, if accidents occurred, repair would be simple. His answer to this is shown at right, a well equipped tinplate pike. Dave can run four trains simultaneously on the four interlocking loops, each of which is blocked and sectionalized.

WORKING BIG TOP. You're not looking at an aerial view of Ringling Bros., but a close-up shot of a working miniature circus. This tricky layout is the work of H. S. Williams, Falconer, N. Y., and just about the ultimate for circus fans, built in ⅜" scale and run on 2⅛" gauge track. He has 50 circus railroad cars and 25 tents as well as numerous smaller ones for varied purposes. The "Big Top" contains 6000 seats with 1000 of them filled with enthusiastic circus fans taking in his show.





This O-Gauge Consolidation is now ready and rarin', ready for freight duty on your pike.

PART IV
TENDER DETAILS

DL&W Consolidation

By WARREN B. CRATER

NOW that your locomotive is completed, we can start working on the tender detail. First, make up the tank floor or bottom sheet, preferably from 1/32" sheet brass. Dimensions shown on all drawings are outside or overall, consequently the thickness of side sheets must be given consideration. The corner radius is 7/32". Arrange to fasten the tank floor to frame with short machine screws at the truck centers.

The coal door may be represented by one piece of brass sheet, cut to the same width as the floor. The radius for the hood should be laid out and cut. The top tank sheet at back and the back coal sheet may also be cut and bent from one piece to the same width as the floor.

The side sheets and back as well as the water legs can best be made in one piece and bent to shape, using light brass or tinplate for material. Cut a strip 1 23/32" wide and about 18" long. Locate the middle and, using a square and scriber, mark a center line. This will be the center line of the back sheet (*see sketch*).

Now measure 1 7/64" each way from this center line and square lines on the material at these points, which then show beginning of the 7/32" radius bends for the back corners.

The 11/32" shown in the sketches is the amount of sheet needed for the corner bends. This figure is obtained by multiplying the diameter 7/16" or .4375" by 3.1416 which gives a full circle circumference of 1.37445" which is then divided by four to give .3436" or 11/32". Next lay out 5 11/16" from these lines, which represents the tank length less the 7/32" radii at front and back corners.

The 1 23/32" width is needed only at sides of the coal bunker. Lay out from the front and back corner lines as shown and scribe the top line for water compartment 1 15/32" from the bottom edge. Cut to finish lines.

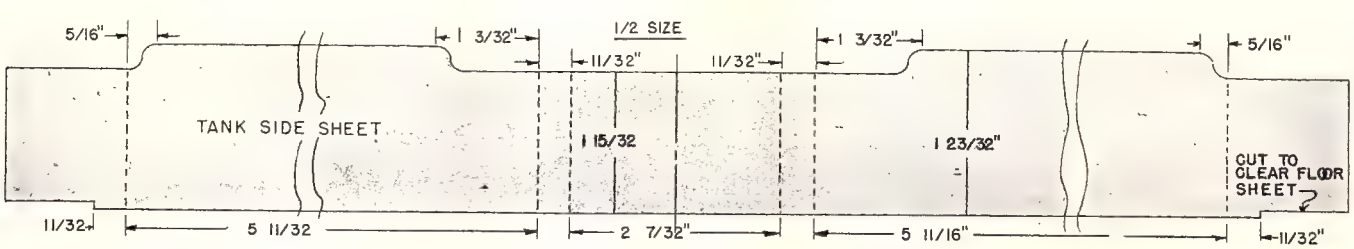
To facilitate your work, a forming jig should be used in bending the corners. Cut one end of a wooden block back 7/16" to a depth of 7/16". Use a piece of 7/16" tube or rod in this cut out section. Now bend the sheet around this form, keeping square and guided by the marked lines. Try this on the floor sheet first. Start the front corner bends on the same form and try to the floor sheet. Then bend further to form the inside of the front water leg. Mark the coal door line and cut off excess. Trim the bottom edge to clear the floor sheet.

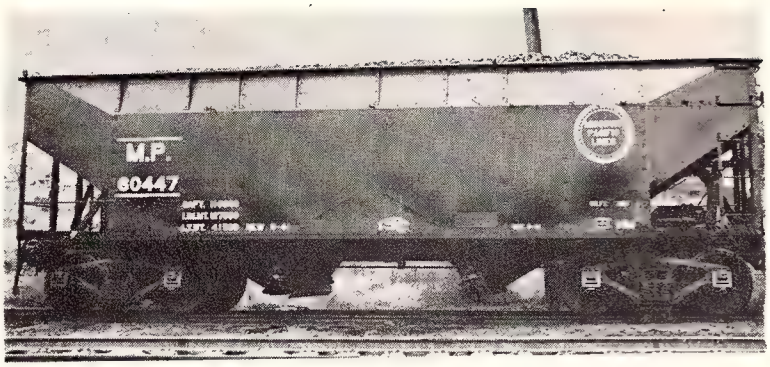
It should now set around the floor sheet with the bottom edges even. Solder from the inside, starting at the back and working to front and around the water leg on each side. The coal door and top sheet at the back may now be soldered in position. Two sheets at the front water legs may be cut from scraps of thin sheet and soldered in place. The manhole and cover may be either commercial or built up.

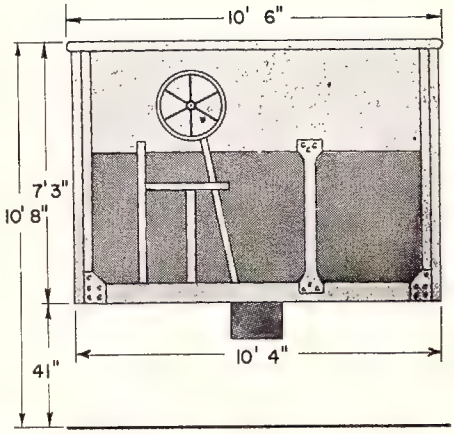
Solder reinforcing strips of any convenient size to the inside of side sheets about 1/4" from top edge. These may be used to support a top of artificial coal. The hood may be cut from thin brass or tinplate and soldered to the coal door and side sheets.

Grab irons of #66 brass drill rod may be soldered to the four corners of the tank and a ladder to the back.

The entire engine and tender are painted black except for the smokebox and front end and stack, which are aluminum. All lettering is gold and extended roman type; numbering is also gold and roman. The "Passenger alphabet and numbers" transfers, available from the trade, are correct for this particular model. Prototype numbers were from 855 to 899 and were shown on cab sides and on the sides of sand dome (*dome directly behind stack*), also on the back of the tank and on the number plate. The name LACKAWANNA was shown on sides of tank. Some old photos of these engines will show other styles of lettering, but this has been standard for more than thirty years.

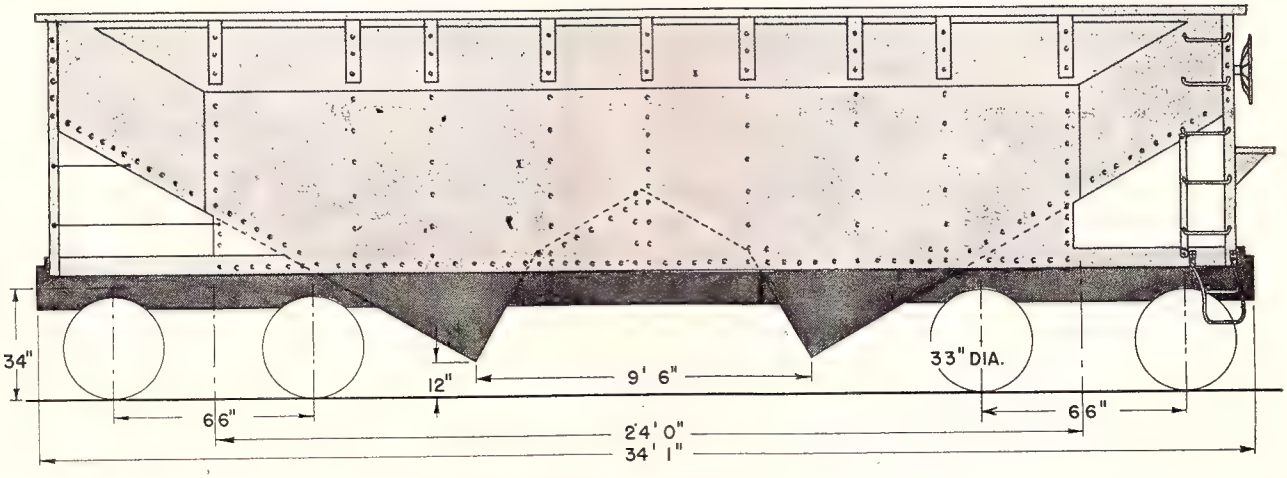


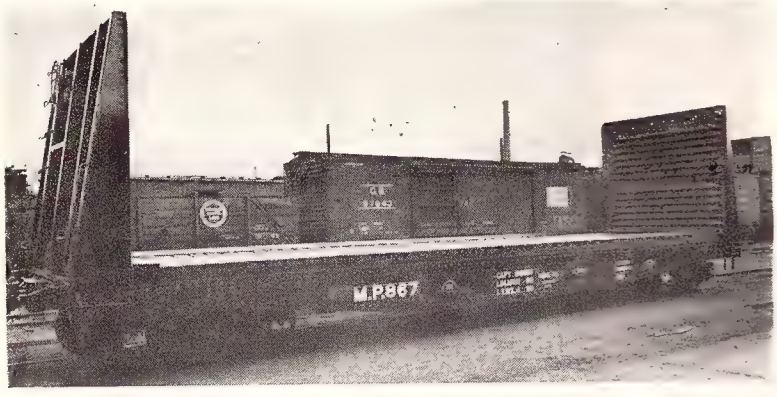


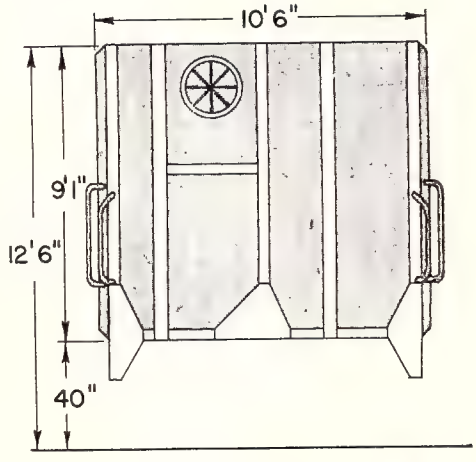


55-Ton HOPPER CAR

Scale: 3/16" = 1'

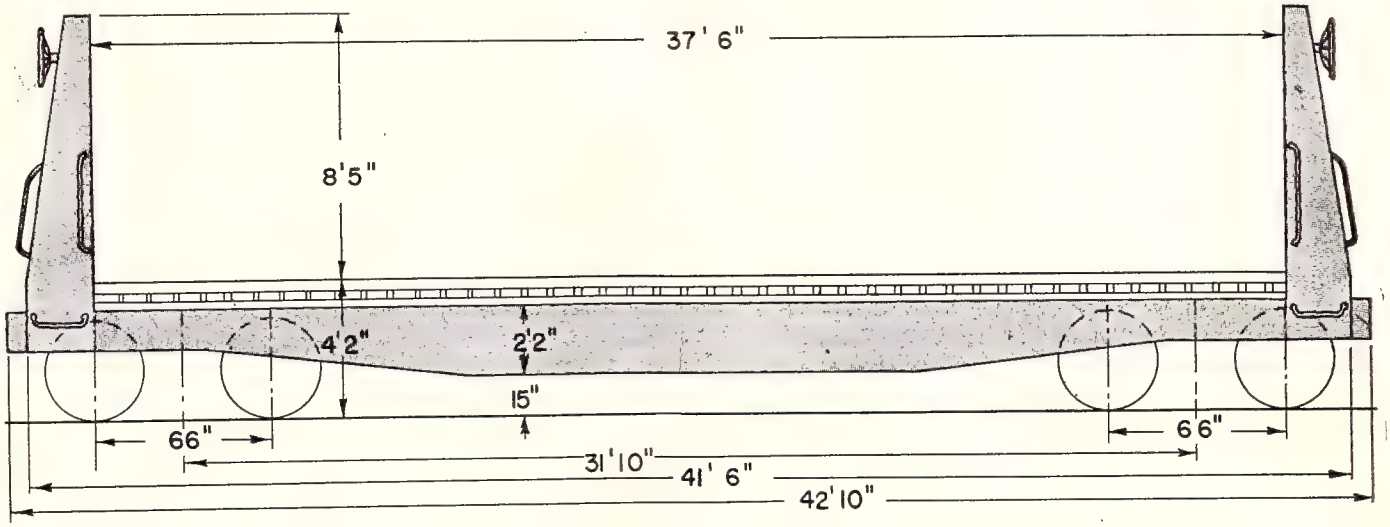






PULPWOOD CAR

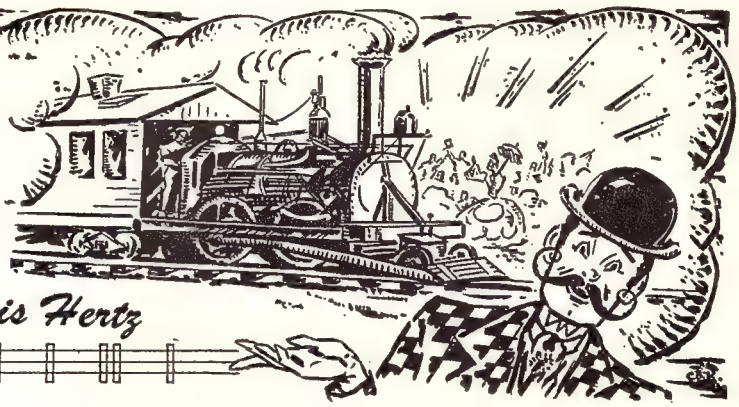
Scale: 3/16" = 1'



CARLISLE & FINCH

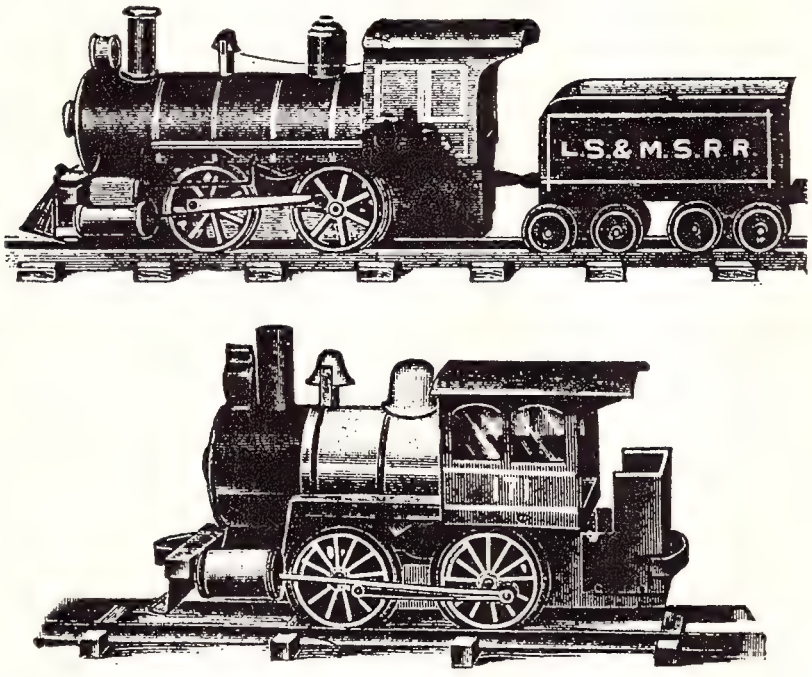
Part II

along the tinplate track with *Louis Hertz*



HAVING discussed the Carlisle & Finch street cars and interurbans last month, we now turn to the old two-inch gauge, two rail locomotives manufactured by this pioneering company. This group of motive power includes the first electrically driven steam outline model locomotive made in the United States. This model appeared in 1899, two years previous to the first Ives clockwork track trains with steam outline locomotives.

The Carlisle & Finch locomotive of 1899 was thus actually the first miniature steam outline locomotive powered by a force other than real steam that was manufactured in this country. It was strictly a pioneer effort and in retrospect, almost half a century later, it is a little difficult to conceive what a startling innovation it was at the time. It would appear that it was completely designed independently of any European steam outline electric model which may then have existed. The entire construction was apparently conceived from scratch by Carlisle & Finch's technicians.



Upper locomotive is the first Carlisle & Finch steam type, the first steam outline electric locomotive manufactured in the United States. Note the inside truck frames on the tender. The lower locomotive is the first model of the Carlisle & Finch No. 20 0-4-0 tank engine, as it was made in the early 1900's.

Before going into details concerning this model, however, it would seem appropriate to point out a great paradox in Carlisle & Finch tinplate products. The company was one of the pioneer manufacturers of electric trains in the U. S., and one of the more successful pioneers at that. The very name is, as was mentioned last month, symbolic of early electric trains. Yet, at no time in the approximately two decades after 1896 in which they made electric trains, did Carlisle & Finch ever manufacture an actual electric type locomotive!

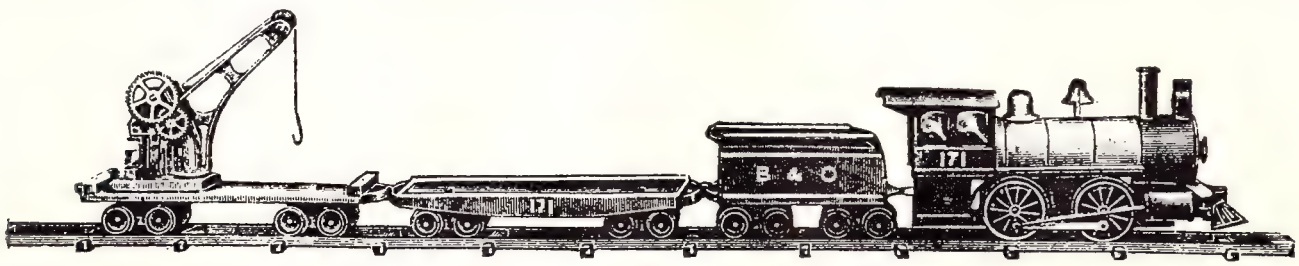
True, they did make their No. 3 coal mining locomotive throughout most of this entire period, but this was as near to an electric type C. & F. ever approached. Actually, this was a model of a real mining locomotive, without a cab, although it was made in a larger size than correct for such a model in proportion to other units in the C. & F. line.

Probably taking their cue from C. & F., other early manufacturers of electric trains produced what they described as "mining engines," but which were actually steeple cab type electric locomotives, or in other words, real electric types.

Perhaps, though it is admittedly a rather speculative *perhaps,* the reason for Carlisle & Finch never making a real electric type locomotive lies in the fact that the other early manufacturers of electric trains were all located in the east where electric type locomotives were used. Most of these firms took their cue from the B. & O. R. R. tunnel locomotives which ran in Baltimore. Carlisle & Finch, however, were located in Cincinnati, which was not served by electric locomotives. In spite of this, considering the popularity of electric outline locomotives, it is surprising that C. & F. never attempted to produce some version of a real electric road engine. The reason

(*Continued on page 47*)

An interesting Carlisle & Finch train of the 1904-07 period. The locomotive is the second and improved type of the No. 4. The derrick was operated by an electric motor mounted on the car. Coupling bows used on all but the earliest of C&F cars are plainly shown in this old cut. Cars were coupled by dropping a staple shaped piece of wire over the bows.



SADDLE-TANK LOCO

36" NARROW GAUGE

By JOSEPH R. RHODEN, JR.

THIS locomotive was built by H. K. Porter about 1927, and should make an excellent model for use as a light switcher or short-haul road engine. Top speed of these locomotives was 12 to 16 mph, although they are capable of speeds up to 25 mph on good track.

This little job is too small for anything smaller than On gauge, although it might be free-lanced for use as a 2' gauge model (On-2). In any smaller gauge you will not be able to fit in a motor. Your best motor will be either Mantua or the Pittman DC-60. Again, you'll have difficulty obtaining drivers of correct diameter, so it either is a question of making them or be satisfied with 28" or 34" dia. You can obtain 34" drivers from Edmond Collins, Kutztown, Pa., while Mantua's drivers for their 0-4-0 are about 28" in ¼" scale.

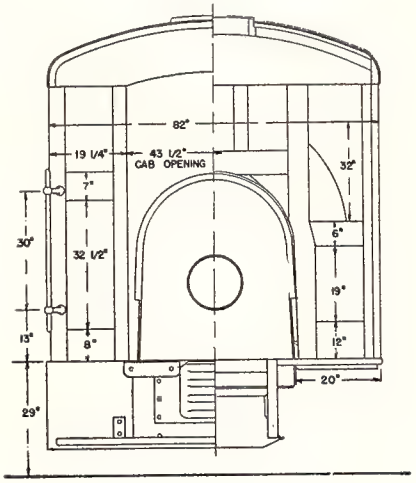
Your best method of making the main frame will be to use two pieces of 1/16" brass for the side frames with ⅛" or heavier brass for the spacers. Your easiest method of making the frame is drilling the axle holes into brass bar stock, although the first method gives the best results in the long run.

The entire locomotive should be made up from metal, as you need as much weight as it is possible to get. If you so desire, make a wood pattern for the tank with a type-metal casting for extra weight. (*Note: lead is too soft for the tank.*) The cab should be made from heavy brass. If you don't mind a little extra expense, it can be engraved from copper—your local newspaper should be glad to have this done for you. A copper engraving will take solder and will add some weight. Just a word of caution: *Don't get your weight too far forward or too far to the rear, or she'll ride unsteady.*

If you want to use knuckle couplers, S-gauge couplers are just about as close to scale as you can get. Mantua's HO passenger couplers make excellent substitutes for the link-and-pin type. The NMRA coupler centre line is 9/16" above rail. (*If you use Mantua couplers, lengthen the un-coupling pin. Use a piece of 1/16" dia. rod and thread it into the hole in the coupler.*) These locos are generally painted dull black with white lettering.

Incidentally, 2-rail is preferred for On, as 3-rail will cause nothing but grief. These small gauges aren't very satisfactory when 3-rail is used. *Anyway, 2-rail looks better!*

I'll be back soon with more plans for On, for 2' and 30" gauges. If you have any plans for On, why not pass them along? It would be nice to hear from you narrow-gauge modelers, particularly those interested in 2' gauge (On-2). Drop me a line at 1244 N. Dearborn Pkwy., Chicago 10, Ill.



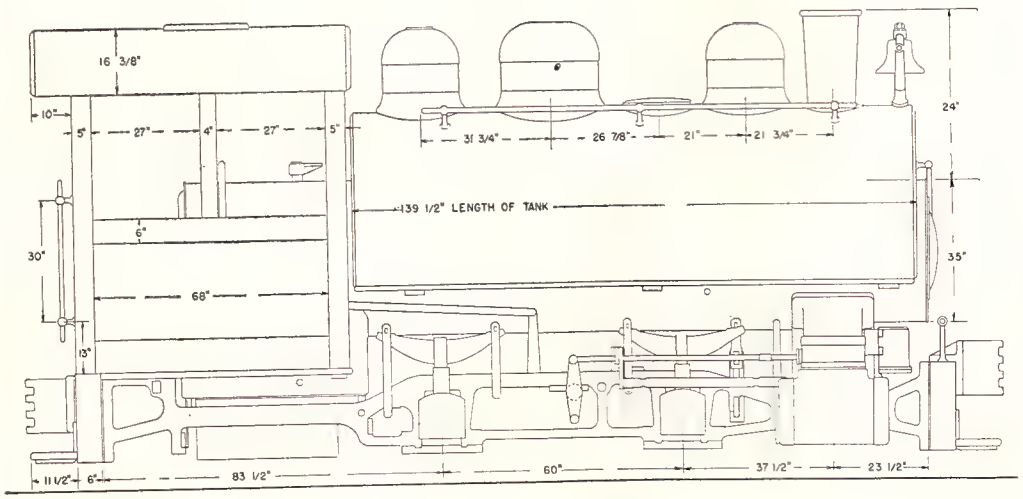
PROTOTYPE DIMENSIONS

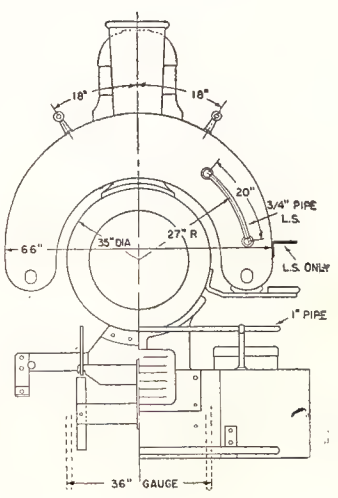
Porter 36" Gauge 0-4-0 Locomotive

Cylinders, bore x stroke	11" x 16"
Drivers, diameter	31"
Wheelbase	5'0"
Length over Bumpers	18'1½"
Height, rail to top of stack	9'8"
Height, Minimum clearance	9'10"
Weight (working order)	21 Tons
Water Capacity (saddle tank)	750 Gals.
Fuel Capacity (coal)	600 lbs.
Fuel Capacity (wood)	30 Cu. Ft.
Radius, Sharpest Curve Advised	45 Ft.
Radius, Sharpest Curve Possible	25 Ft.
Maximum Hauling Capacity (level track)	1,365 Tons

(Note: *In ¼ scale, the above locomotive should operate over a curve of less than 6¼ radius.*)

Scale: ¼" = 1'





Model Bungalows

By JOHN KEMP

MODEL bungalows are comparatively easy to build and make fine additions for your scenery. While these have been built to 3.5 mm. scale for HO gauge, the same methods can be followed up to ¼" scale.

Construction material is basically heavy bristol board, such as that sold for making posters. Various other papers were used, plus some celluloid or equivalent. Airplane cement was the adhesive and a sharp single edge razor all the tools necessary with occasional use of scissors.

Much can be said for building all such houses at the same time, sort of a semi-mass production arrangement. This can be done, since the homes are similar enough to permit it. The advantage, however, of building them separately is the improvement of your technique as you go along, plus the addition of extra detail.

The pattern for all sides of the house is laid out on a strip of bristol. All cutouts for windows, doors, etc., are made and the sides cut to shape. Almost all detail is added before the sides are wrapped around to form "four walls." Above and below each window and over each door, cement a sill of either paper or bristol of a different color or painted to contrast the sides. The white unpainted edges of such strips will serve to accent the lines, even though this is not strictly to Hoyle.

Before leaving the flat surface, horizontal lines are marked in with pencil to represent clapboards. The strip of sides is then turned over and the window detail added. The drawing shows how the windows can be made in a most realistic way. Directly in back of the wall is placed a piece of bristol or paper in which a square has been cut out to represent the upper sash. This should be slightly less in width than the window opening. Directly below the meeting rail, another space is cut out just as wide as window opening. This serves to space the lower sash properly in from the wall. Inside of the upper sash is covered with celluloid. In the same plane with this celluloid, place the lower sash whose opening is again slightly narrower than window opening. Behind this is placed its own celluloid. Using this procedure, one or all of the windows may be shown partly raised with good realism.

This involves a good deal of trouble which you may not care to follow with a great number of windows or in such a small gauge. You could just as well cement strips across top, bottom and sides of each window opening, allowing them to project slightly to give this same effect at a quick glance. The meeting rail must be cemented across.

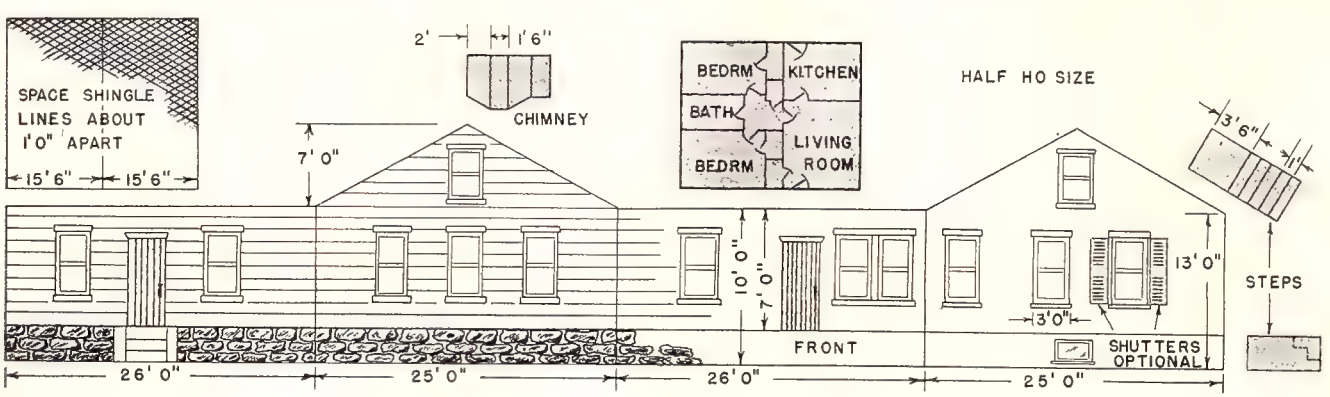
Although it is not shown, each window should have a shade behind it, and in each house the shades should be at various levels. All might be down on the sunny side, high up on the shady side. Bathroom shades or those in the bedroom where Junior is taking his nap, might be fully drawn. If your houses form a little colony similar to mine, try making them all one color. Here and there you might make one shade askew or even falling off the roller. My shade material came from large solid coloring on magazine covers. If you intend to light your houses, make certain there is no printing matter on the inside of the shades.

With the strip completed as much as possible, scribe the corners part way through and fold the walls into a house. Scribing should be on the outside of each bend. To assist in maintaining shape, each house should have its walls cemented around a floor, the dimensions of which are determined from the house itself.

You are now ready for the foundation, which is simply building paper cemented around in one continuous strip. Make the joint come behind a porch or at a cellar window to be inconspicuous. If no building paper is handy, paint in the foundation.

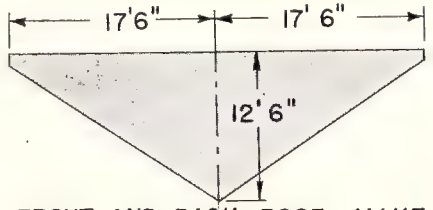
The main roof is next installed, followed by dormers (*if used*) and other parts of the roof. The entire roof is then topped with a chimney, placed ap-

(*Continued on page 46*)

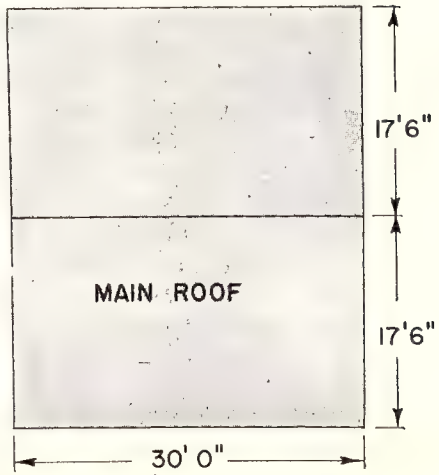


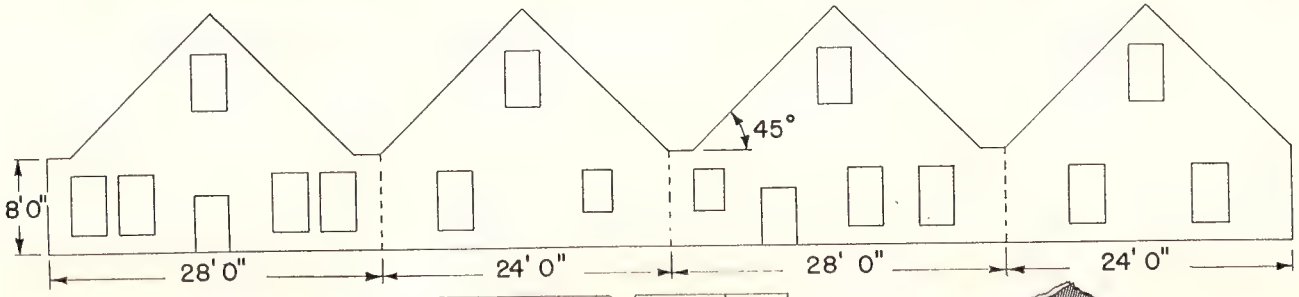
MODEL BUNGALOWS

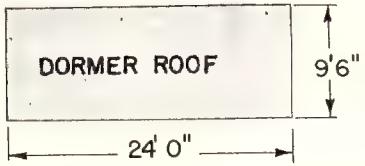
1/2 HO SCALE

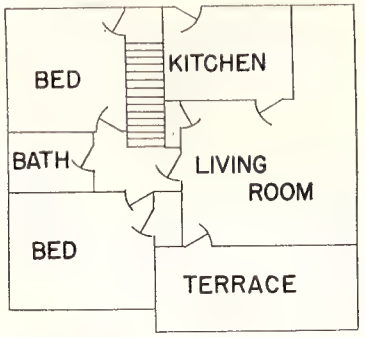


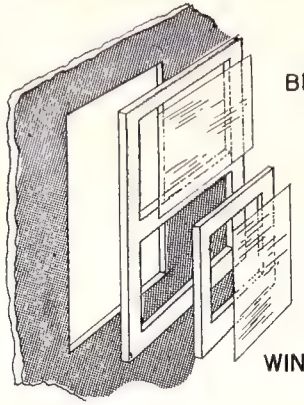
FRONT AND BACK ROOF *MAKE 2*



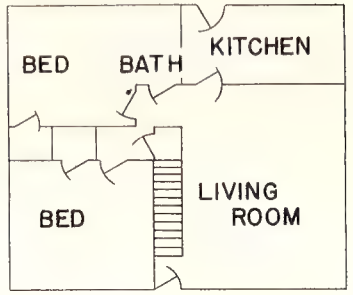


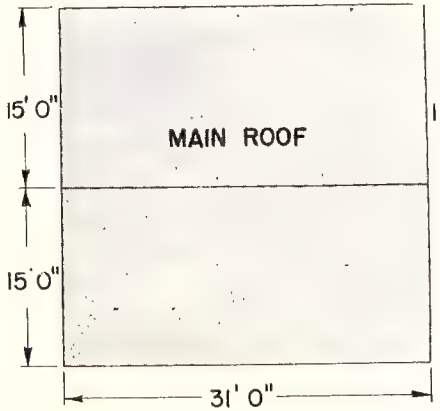


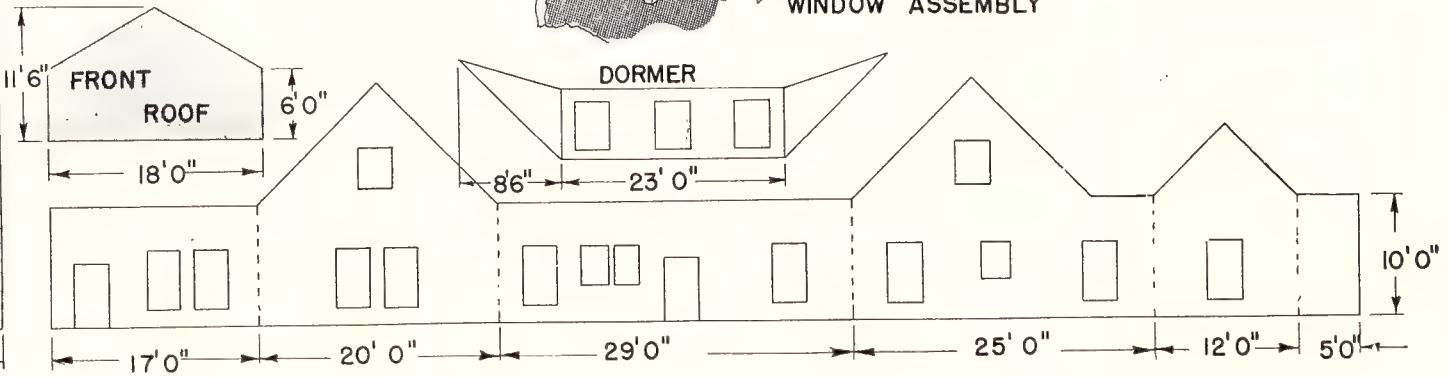


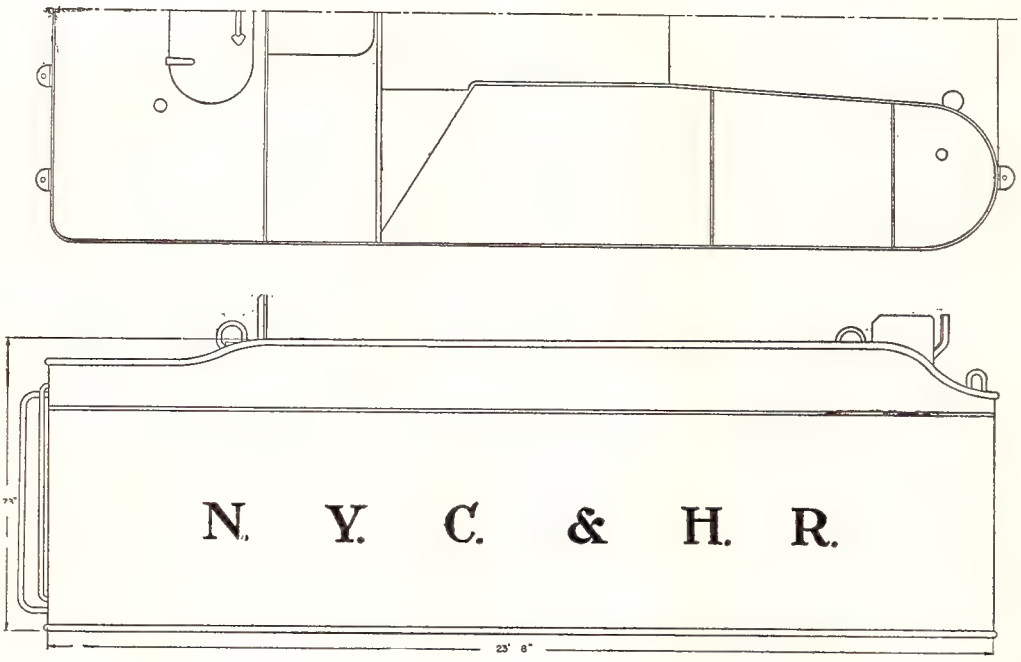


WINDOW ASSEMBLY





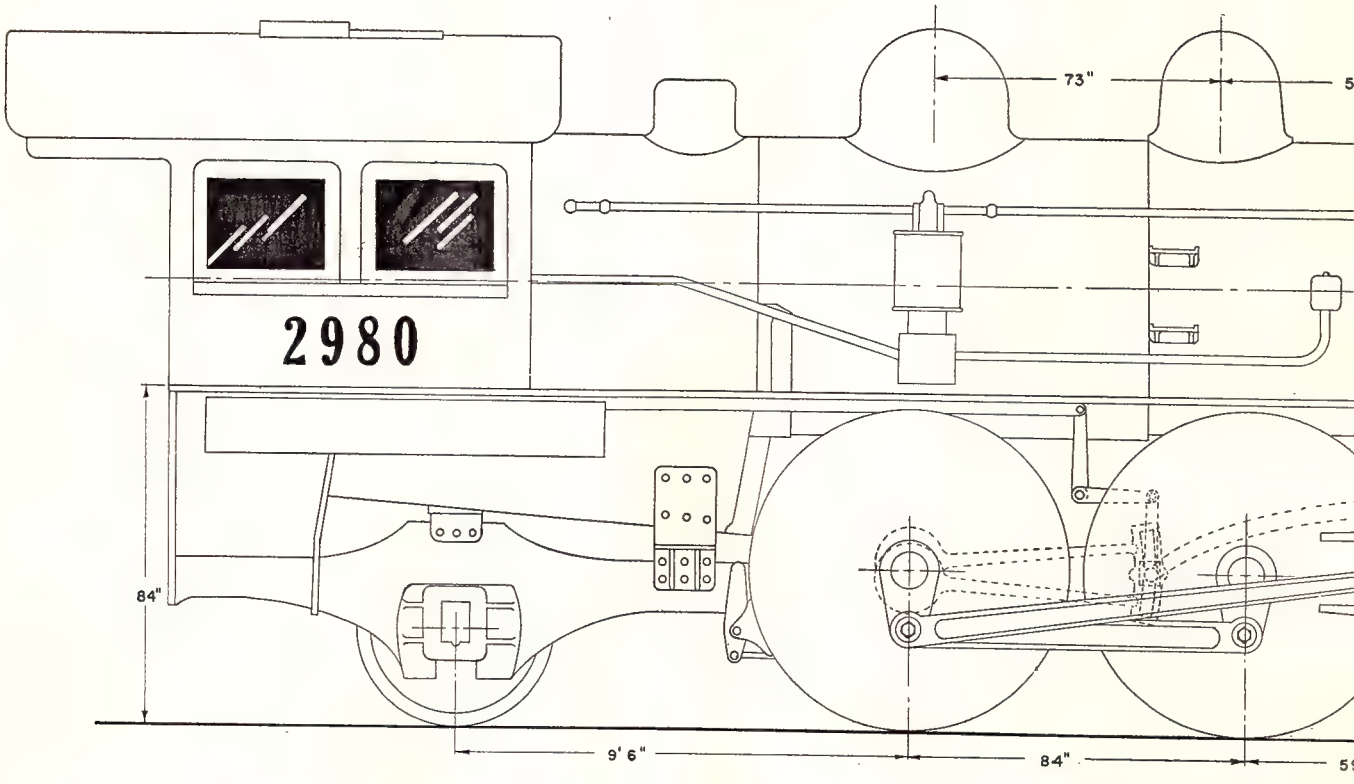


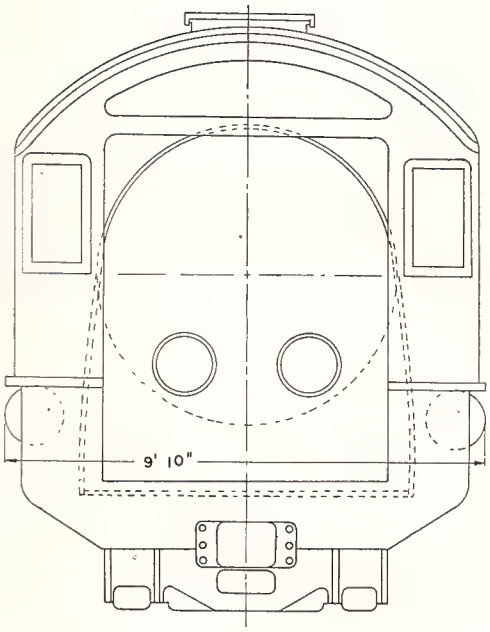


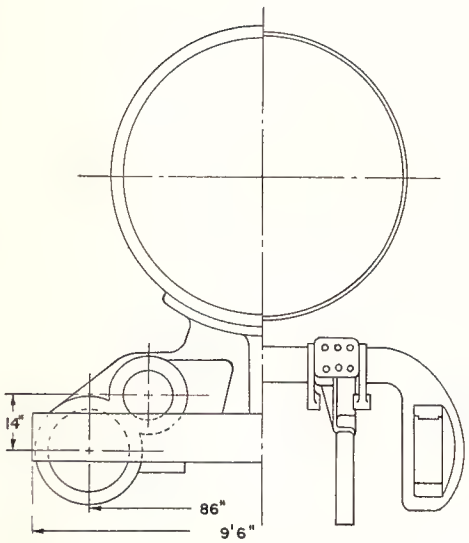
N. Y. C.

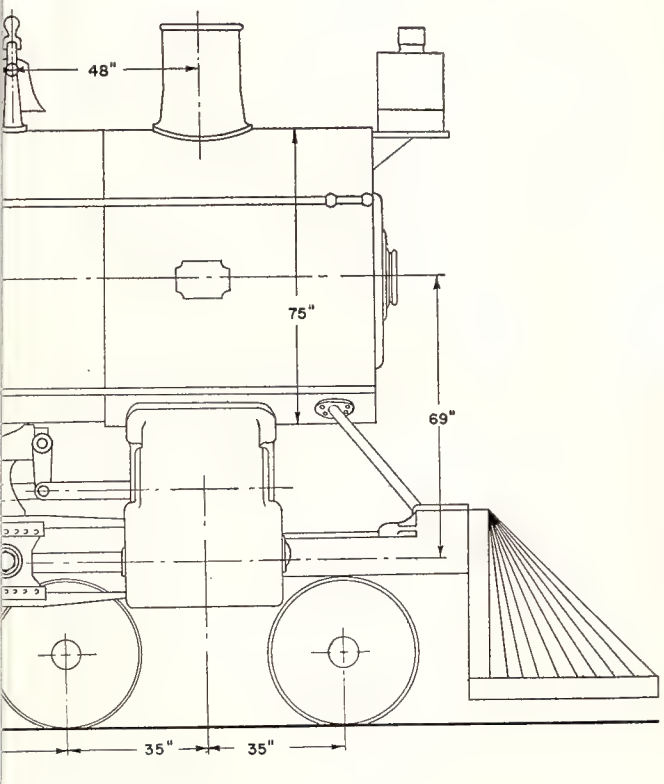
Atlantic Locomotive

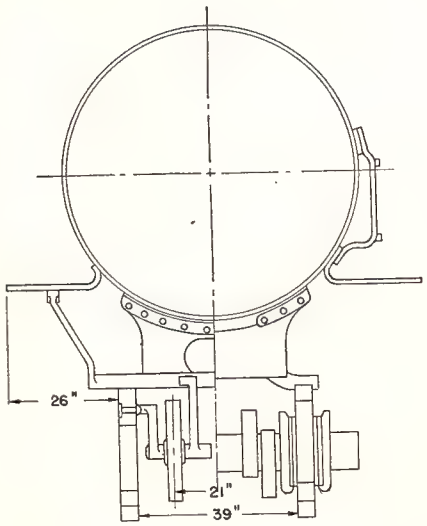
Scale: $\frac{1}{4}'' = 1'$

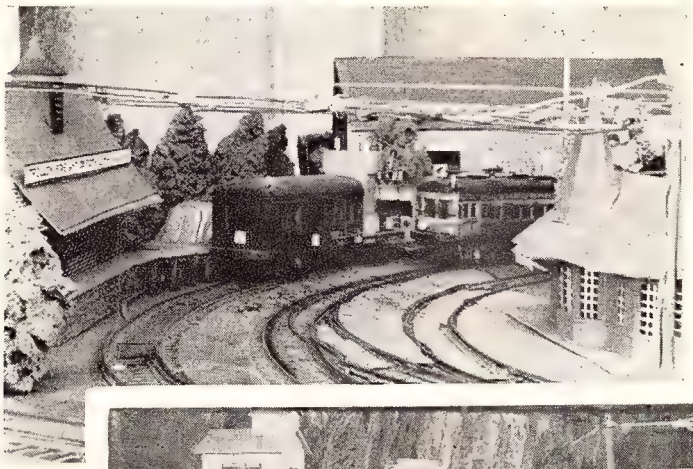



9' 10"


14"
86"
9'6"


48"
75"
69"
35"
35"


26"
21"
39"



Left—Switches and curves like these on the author's pike are possible, but wait until you've had some experience before attempting such track and wirework. Right—Local car follows a limited into terminal on author's pike. Try a wye or a crossing when slightly advanced in model trolleys. Lower—Scene on large HO steam layout of Rev. B. Harry Barnes. Small car line along the railroad provides good proving ground for trolley technique.

GETTING STARTED ON YOUR

Model Trolley Line

By WILLIAM SCHOPP

WITH model materials becoming more available every day, many model railroaders who have been following other branches of the hobby (*including the arm chair*) have decided that it is about time for them to begin the model trolley line of which they have been dreaming. Several have written to the author for advice on beginning and no doubt there are others who feel the need of similar assistance.

My first piece of advice is this: Don't attempt a model trolley line without previous experience in model railroading, particularly in soldering. You not only have to make the track so that the car will not derail (*too much*), but you have to hang the wire so that the pole will stay put. Aside from that, you usually have to do quite a bit of work on the rolling stock. The person whose experience has been entirely with the easy-to-put-down tinplate track is likely to become disgusted at the slow progress he makes while laying scale track and hanging overhead wire. Soldering never seems to come easy to the novice, and soldering up in the air where there is nothing to lean on is particularly difficult.

A second piece of advice is to begin with what you have! I started with an HO gauge two-rail line, the Moonlight & Violins Ry. I borrowed a motor truck from a Diesel switcher and built a car body for it. The car would run from either two-rail or overhead, using the scheme shown in fig. 1. I worked out the bugs on the two-rail layout, then began to hang wire. Quarter-inch dowels pounded into the platform were poles, while brackets were bits of heavy wire thrust through holes in the tops of the poles. The wires were soldered to the brackets with crude L-shaped hangers. Pull-offs were kept at a minimum by closely spaced poles and the relatively wide radius of the steam road tracks. One siding was wired by putting a wire frog in the main line wire. This experiment was so successful that I made two more cars, and after an impending change of address, made an all-trolley layout, which could at first be operated also by two-rail.

Similarly, if you have an O-gauge tinplate pike, begin with that. Try stringing wire over a simple oval and mount a pole on an engine. Add a few sidings or branches. In all events, try to utilize what you have. Let your supporting poles be dowels, welding rods or whatever is convenient. Use copper wire for the overhead, even if phosphor bronze is better and harder to obtain.

If you have an extensive pike that would make a trolley look out of place, try making a small trolley line through your village. One of the photos shows a scene on the pike of Reverend B. Harry Barnes, with a Birney on a small trolley line running by the railroad. More than one interurban bug has started this way and ended up by doing away completely with steam, having an all overhead operated pike.

Don't do away completely with what you have and go completely trolley, or you may lose all interest in the hobby. Leave yourself something to fall back on during inevitable periods of disgust.

What shall you have for your first motive power? Lacking an electric engine that can be equipped with a pole or a Diesel switcher or gas car which could be likewise treated (*or from which you may borrow a motor truck*), your first problem will be to get your motor truck. Consult your hobby store as to what is available; obtain one and then build your car around it. What car shall you build? Plenty of plans have been published in THE MODEL CRAFTSMAN and other magazines. Choose one of them or make up your own plans. Perhaps you would like to model the old Gazzipsburg, Smirkhenry and Woodpike Traction Co. cars that used to go by grandpa's glue factory. If you can find a picture of one, you're all set, provided you dig up my article, Draw Your Own Car Plans, that was in the Craftsman, December, 1944. For my best description on building a car in any gauge, see the article on an Interurban Observation Car, May, 1943—of course, the car you make need not be an observation type.

Hanging wire is a topic on which much can be written. But briefly, try this. Erect poles on either side of the track at reasonable intervals and stretch span wires tightly between pairs. It is a little more work to drill holes through the tops of the poles and insert brackets. Now hang the contact wire tightly under the span wires. The hanger shown in fig. 2 is a good type, easy to form and put in place.

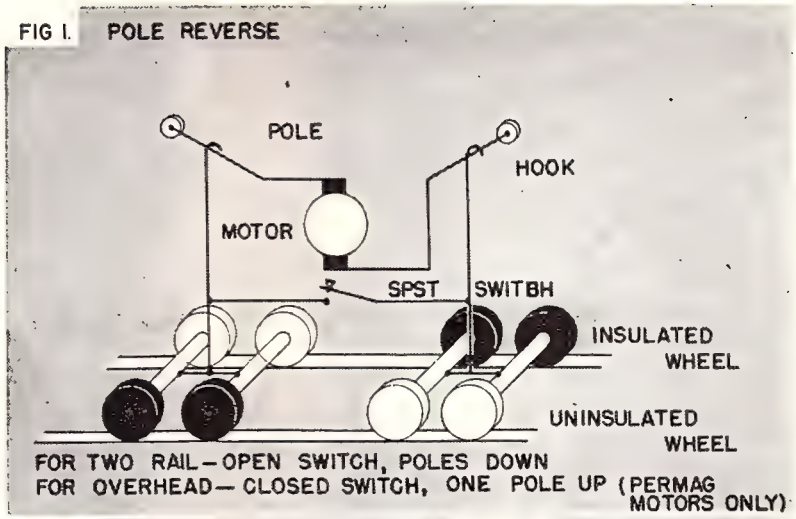
An easy to make wire frog is shown in fig. 3. Use light brass or tin and punch in the holes and then bend to shape. The best location for a wire frog in my experience is *directly* over the track frog, although this is not in line with actual

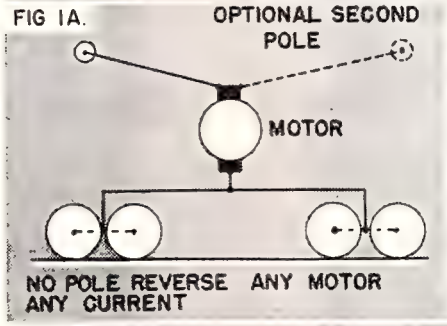
practice. Add your guy wires, pull-offs, etc., as you see the need. Several articles on wire work have appeared in the Craftsman, Aug. '41, Sept. '41, and Nov. '44.

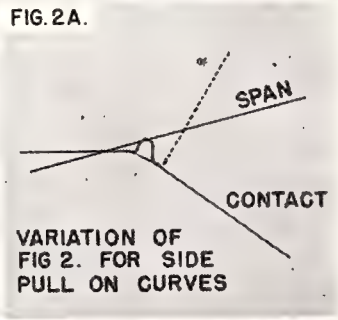
The pick-up pole or trolley which bears on the wire may be a bit beyond you at this time. These are commercially available for approximately $1.25 in HO and OO at the present time and I'll gladly advise you where to obtain them if you simply send in a stamped envelope, care of this magazine. Even cars and car kits can be purchased, but at present nobody has produced a line of sharp radius switches. Supporting poles may also be bought commercially. Power supply and control are practically the same as for "steam" trains. Follow your ads in the magazine for no doubt new trolley products will soon be out.

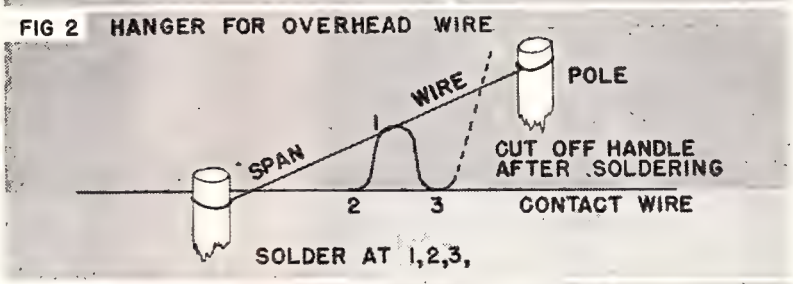
Many of the choice Car Barn and allied articles are listed in the Back Issue Release appearing elsewhere in the magazine. While a great many of these articles may be based on experience in one gauge, their lessons by and large are applicable to all gauges. If your file does not include all these magazines, it will be worthwhile to obtain them. Large public libraries have a photostat service so that you may have pertinent plans copied for your own use. Perhaps you can borrow the particular issue you want from a friend. Plans for other specific cars are hard to get since both the owners and builders have frequently departed. If you are near a library, pore over old volumes of the Electric Railway Journal, Street Railway Journal, Transit Journal, Mass Transportation and Electric Railway Review. Frequently when the cars were new, one or more of these journals published small plans of them, which, together with a photo or common sense, will enable you to build a model. Brill Magazines, builders' catalogs and the Electric Railway Cyclopedia are also of help. Modern fan publications, such as bulletins of the Electric Railroaders Association, the Central Electric Railfans Association and the National Railway Historical Society, as well as publications like Trolley Sparks and Interurban Newsletter, will also supply good dope occasionally.

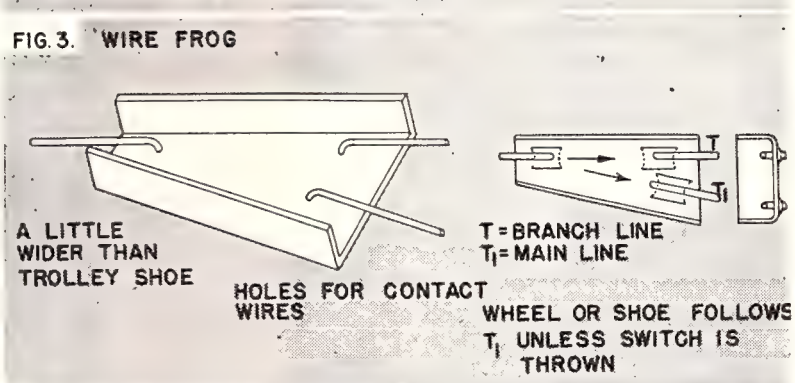
One further piece of advice and that is to do your own work as much as you can. Why pay big money for a motor car when you can buy a very good car kit (in HO gauge) for three bucks and a motor truck for eleven? A day's work or so and you will have an operating car which you can say you made yourself. If you make your own car kit, you can save most of the three dollars! Sure, you can find somebody who will turn out short radius switches for you for under two dollars, but why not make them yourself for the price of the rail? The experience and confidence gained in making the first switch will make others both easier and better. Think twice about buying ready-laid track at fabulous prices when you can get rail, ties and spikes for one-quarter the amount. Self-reliance is particularly important in trolley modeling because you will never be able to buy overhead wiring ready to hang; you will always have to solder it up!

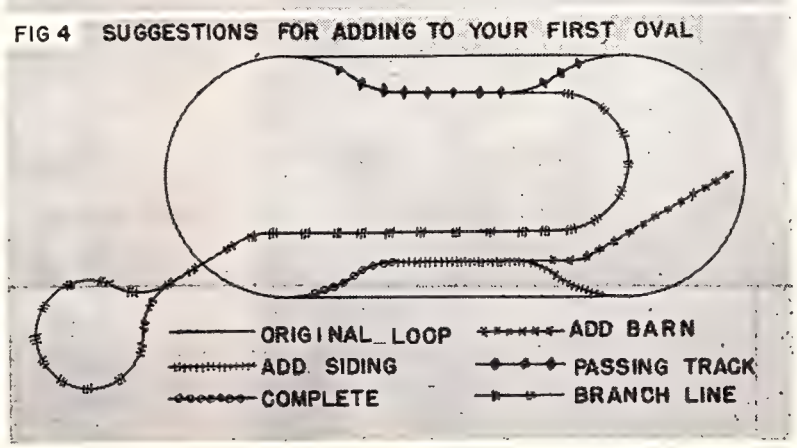


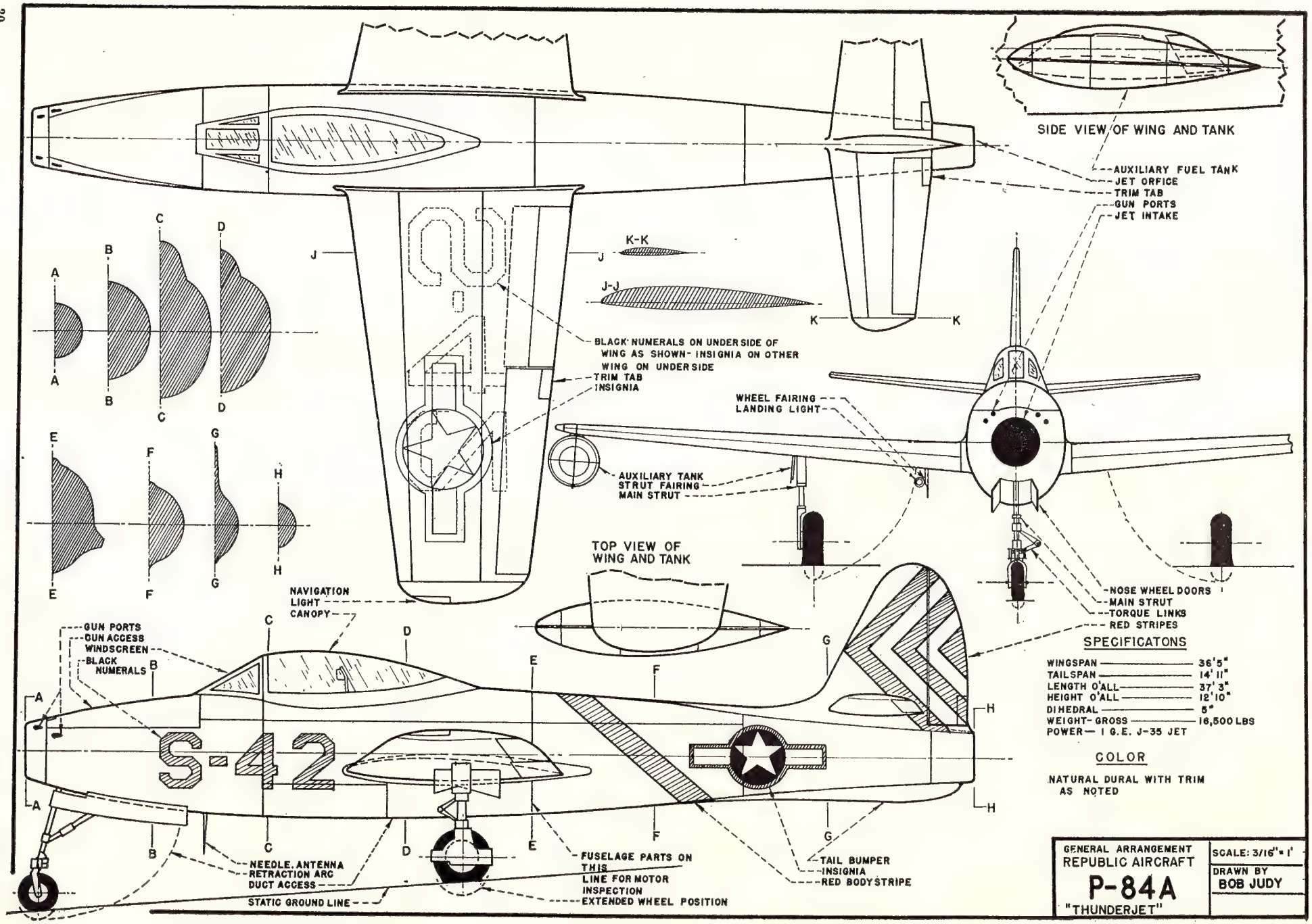











SIDE VIEW OF WING AND TANK
AUXILIARY FUEL TANK
JET ORFICE
TRIM TAB
GUN PORTS
JET INTAKE
K-K
J-J
BLACK NUMERALS ON UNDERSIDE OF WING AS SHOWN- INSIGNIA ON OTHER WING ON UNDERSIDE
TRIM TAB
INSIGNIA
WHEEL FAIRING
LANDING LIGHT
AUXILIARY TANK STRUT FAIRING
MAIN STRUT
TOP VIEW OF WING AND TANK
NOSE WHEEL DOORS
MAIN STRUT
TORQUE LINKS
RED STRIPES
NAVIGATION LIGHT
CANOPY
GUN PORTS
GUN ACCESS
WINDSCREEN
BLACK NUMERALS
S-42
NEEDLE, ANTENNA RETRACTION ARC
DUCT ACCESS
STATIC GROUND LINE
FUSELAGE PARTS ON THIS LINE FOR MOTOR INSPECTION
EXTENDED WHEEL POSITION
TAIL BUMPER
INSIGNIA
RED BODY STRIPE
SPECIFICATONS
WINGSPAN 36'5"
TAILSPAN 14' 11"
LENGTH O'ALL 37' 3"
HEIGHT O'ALL 12'10"
DIHEDRAL 5°
WEIGHT- GROSS 16,500 LBS
POWER— 1 G.E. J-35 JET
COLOR
NATURAL DURAL WITH TRIM AS NOTED
GENERAL ARRANGEMENT
REPUBLIC AIRCRAFT
P-84A
"THUNDERJET"
SCALE: 3/16"= 1'
DRAWN BY
BOB JUDY

Heinkel-112

By W. MUSICANO

A SCALE model with the speed of a specially designed racer! *Impossible you say?* Well, just try your hand at this Heinkel fighter. With a projected wing area of 162 square inches and powered with an Ohlsson & Rice "60", top speed hovers in the 80 MPH class. It is the answer to those modelers who are looking for a speedy scale model. Now for a few words about the full size plane.

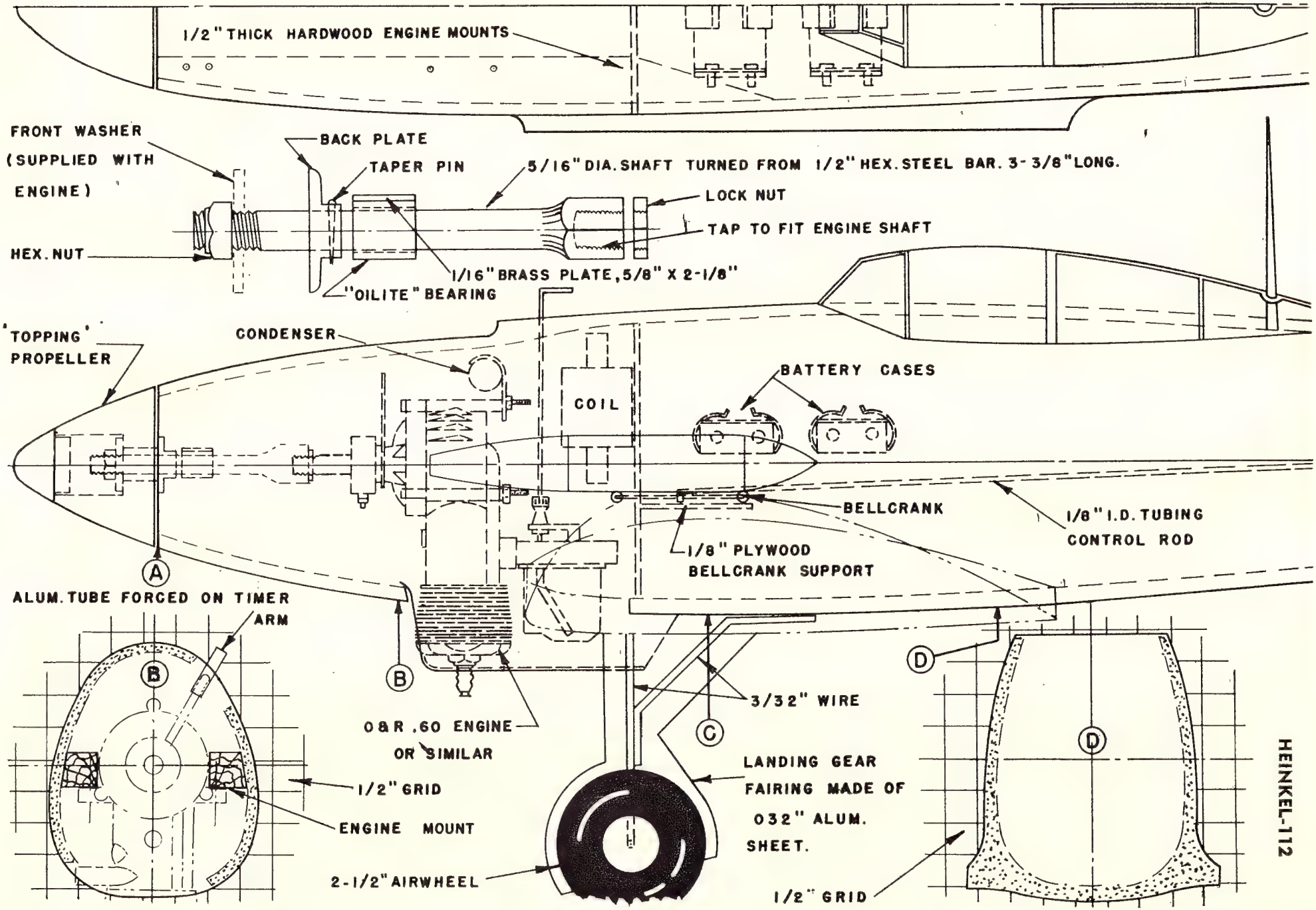
In spite of its up to date appearance, this design is not new. It was introduced in 1938 as a multi-purpose fighter-trainer-interceptor, depending on the power and armament. Engines from the 685 h.p. Junkers Jumo diesel to the 1,600 h.p. Daimler Benz were used according to the purpose of the ship. A Daimler powered He-112 held the world's speed record with over 463 MPH, although standard speed was slightly over 325 MPH. Standard armament (fighter version) consisted of two 20 m.m. cannon in the outer wing panels and two 7.7 m.m. machine guns in the cowl. Interceptors used six to eight machine guns in the wings and cowl. All except the interceptor had three small bombs fitted to internal racks in each inboard wing panel. Although of excellent design and truly a great step forward, the Heinkel He-112 did not become widely known and it remained for the He-113, a night fighter version, to become renowned in World War II.

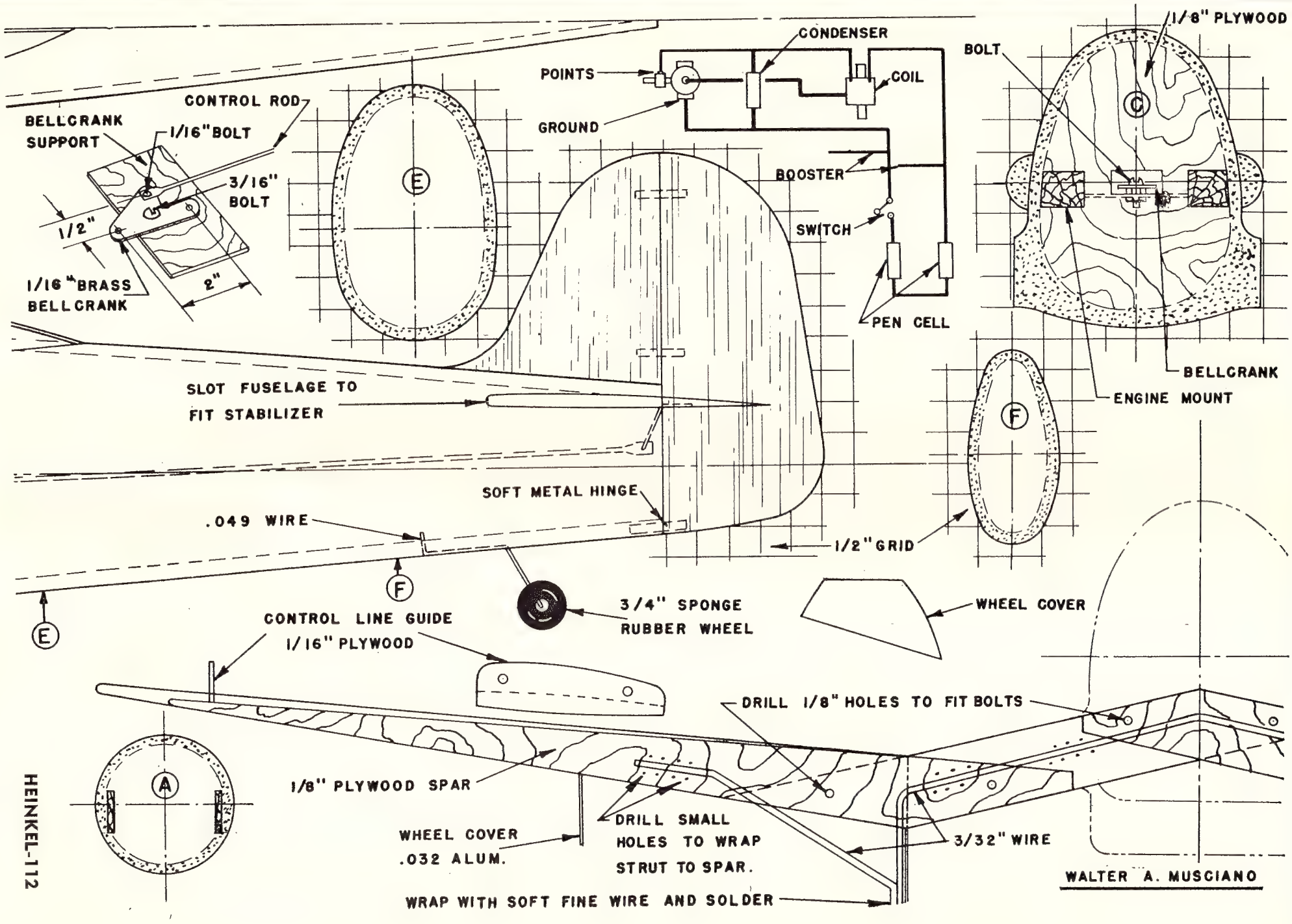
Model builders will appreciate, as did the author, the adaptability of this design to control line flying. The elliptical wings of low aspect ratio combine efficiency with great strength and the inverted gull permits the use of a shorter landing gear. Advantage was taken of the underslung radiator to house both engine cylinder head and gas tank. This engine location necessitates the use of an extension shaft which is actually not as difficult as it appears. If the builder so desires, he can install the engine in conventional manner, upright or inverted, and balance the ship by moving the ignition rearward. It will be noticed that the span is almost the same dimension as the fuselage length, a condition normally found on racing planes.

As an aid to enlarging the plans, they were drawn one half model size so that by merely doubling any measurement on the plan actual size model plans may be drawn. When these are completely understood, construction may be started. The original fuselage was carved from two solid blocks of balsa cemented lightly along the horizontal centerline and, when dry, the side and then plan views are carved. Following the sections on the plans, the fuselage should be completed and given two coats of clear dope and then pried apart and hollowed to about ¼" wall thickness. Apply two coats of dope to the interior and install the engine mounts. Note that they run clear to the nose to support the "oilite" shaft bearing. Bulkhead "C" can be added, using plenty of cement followed by the bellcrank foundation, bellcrank and control rod. All of these mentioned items are attached to lower shell only. Stabilizer and elevator, cut from 3/16" sheet balsa and doped, may be cemented in place at this time. After the control rod has been connected and is in working order, the upper rear portion of the fuselage should be well cemented to the lower shell. The forward portion remains removable in order to allow access to engine and ignition. Coil, condenser and battery boxes (four pen cells) should be firmly mounted to fuselage because they have the habit of tearing loose at the first rough landing. The coil may be strapped to the bulkhead with fibre strips.

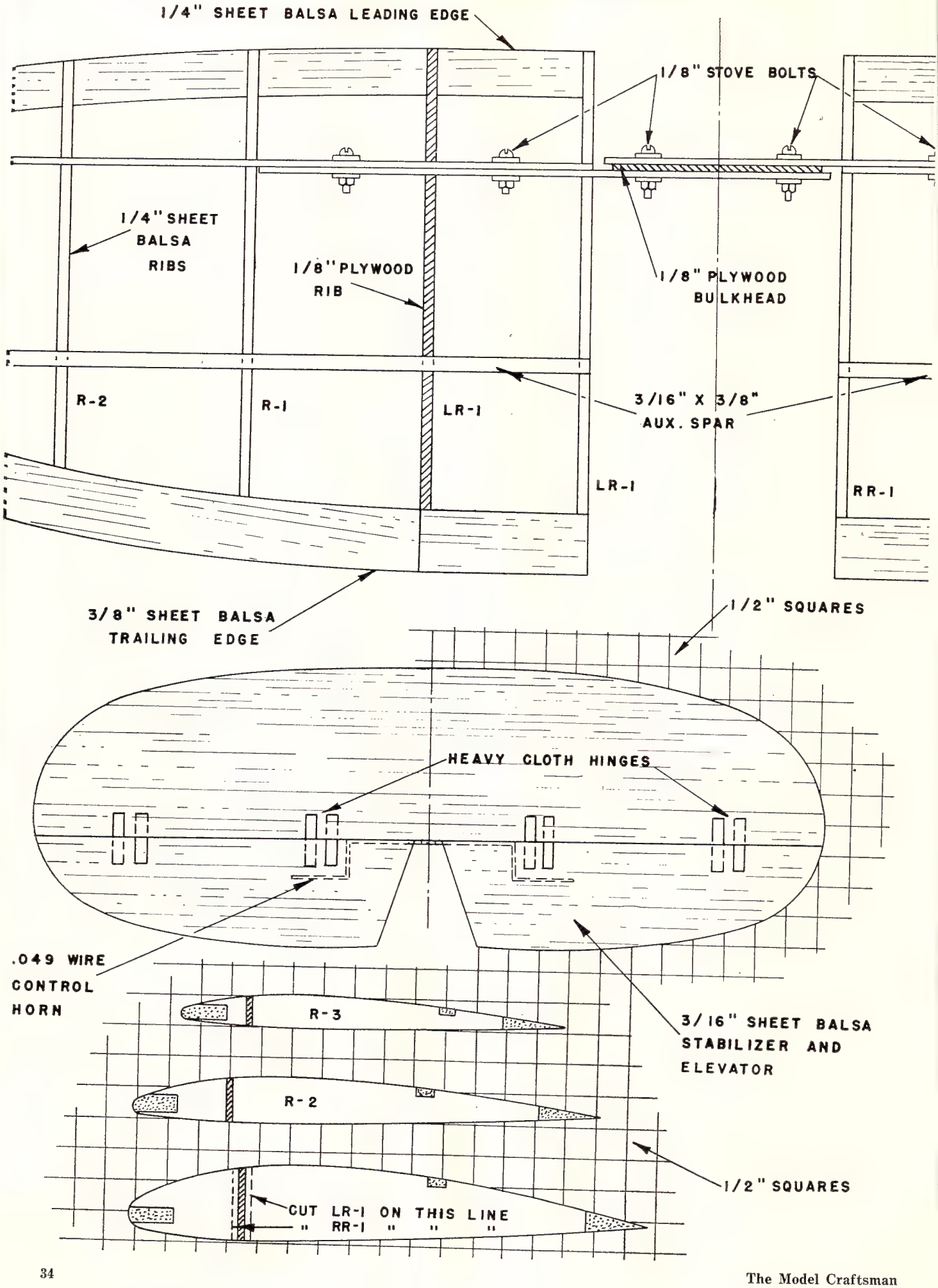
Extension shaft and engine location shown have advantages. The plane is easily handled because the weights are located close to the C. G. and scale appearance is not marred by a protruding cylinder in the bullet nose. "Oilite" is the name of the bearing used; ask for #A-401-3 in any reputable hardware store. This bearing is made of powdered metal and oil and does not require lubrication. It is soldered well to the brass plate which is bolted to the engine mount as shown. The bearing should be soaked in gasoline, ether or alcohol before soldering in order to drive out the oil. After soldering, the bearing is soaked in motor oil to replenish its lubricating qualities. It is doubtful whether there is any modeler who does not have access to a lathe which is required to make the shaft extension. It is turned from hex stock steel to dimensions given. The locknut is a conventional hex nut filed to 1/8" thickness. The prop back plate can be turned from dural or steel and

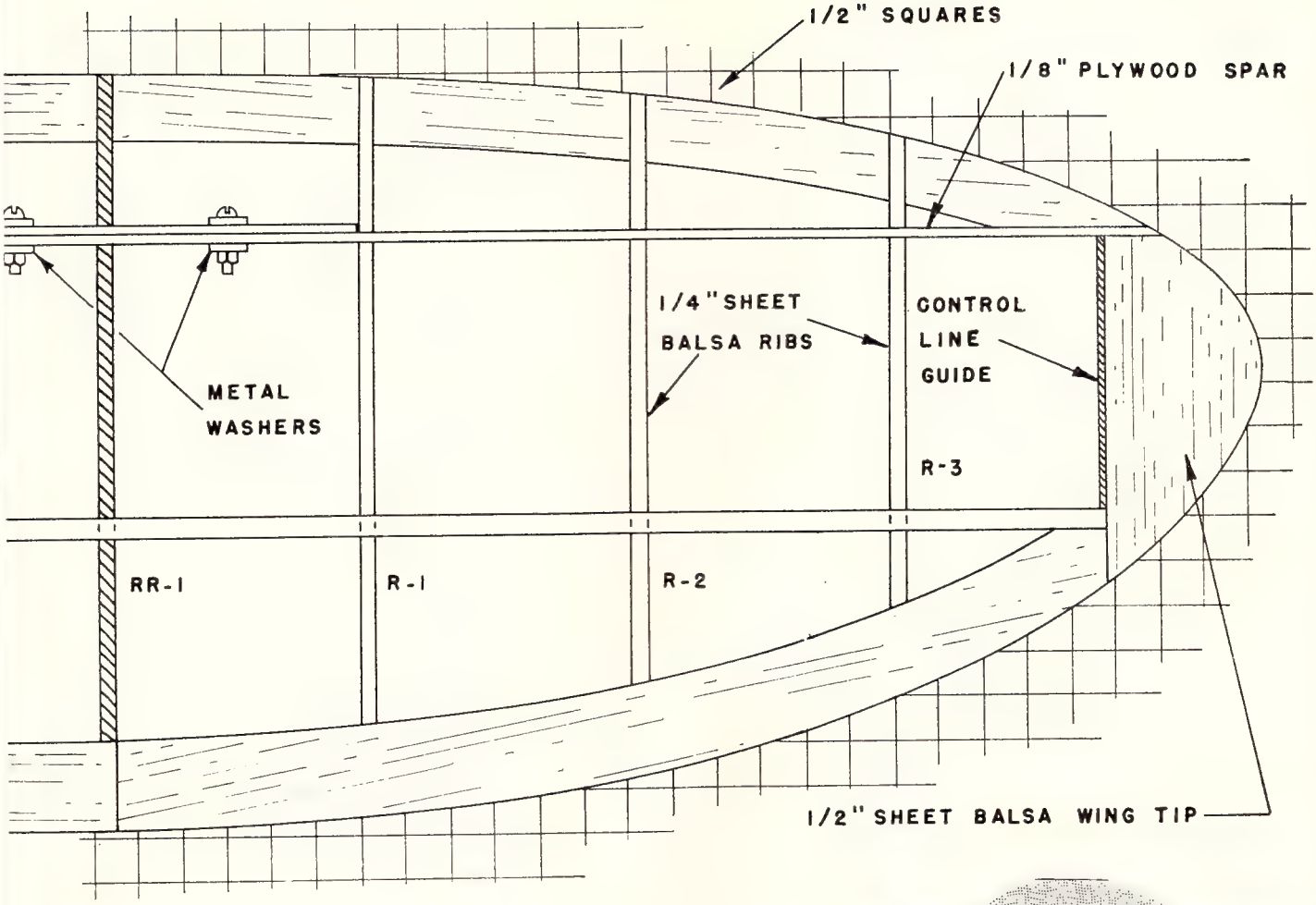
(*Continued on page 36*)


1/2" THICK HARDWOOD ENGINE MOUNTS
FRONT WASHER (SUPPLIED WITH ENGINE)
BACK PLATE
TAPER PIN
5/16" DIA. SHAFT TURNED FROM 1/2" HEX. STEEL BAR. 3-3/8" LONG.
LOCK NUT
TAP TO FIT ENGINE SHAFT
HEX. NUT
1/16" BRASS PLATE, 5/8" X 2-1/8"
"OILITE" BEARING
TOPPING PROPELLER
CONDENSER
COIL
BATTERY CASES
BELLCRANK
1/8" I.D. TUBING CONTROL ROD
1/8" PLYWOOD BELLCRANK SUPPORT
A
ALUM. TUBE FORCED ON TIMER ARM
B
B
O&R .60 ENGINE OR SIMILAR
3/32" WIRE
C
LANDING GEAR FAIRING MADE OF 032" ALUM. SHEET.
1/2" GRID
ENGINE MOUNT
2-1/2" AIRWHEEL
D
D
1/2" GRID
HEINKEL-112


CONTROL ROD
BELLCRANK SUPPORT
1/16" BOLT
3/16" BOLT
1/2"
1/16" BRASS BELLCRANK
2"
CONDENSER
POINTS
COIL
GROUND
BOOSTER
SWITCH
PEN CELL
1/8" PLYWOOD
BOLT
BELLCRANK
ENGINE MOUNT
SLOT FUSELAGE TO FIT STABILIZER
SOFT METAL HINGE
.049 WIRE
1/2" GRID
3/4" SPONGE RUBBER WHEEL
WHEEL COVER
CONTROL LINE GUIDE 1/16" PLYWOOD
DRILL 1/8" HOLES TO FIT BOLTS
1/8" PLYWOOD SPAR
WHEEL COVER .032 ALUM.
DRILL SMALL HOLES TO WRAP STRUT TO SPAR.
3/32" WIRE
WRAP WITH SOFT FINE WIRE AND SOLDER
WALTER A. MUSCIANO

HEINKEL-112

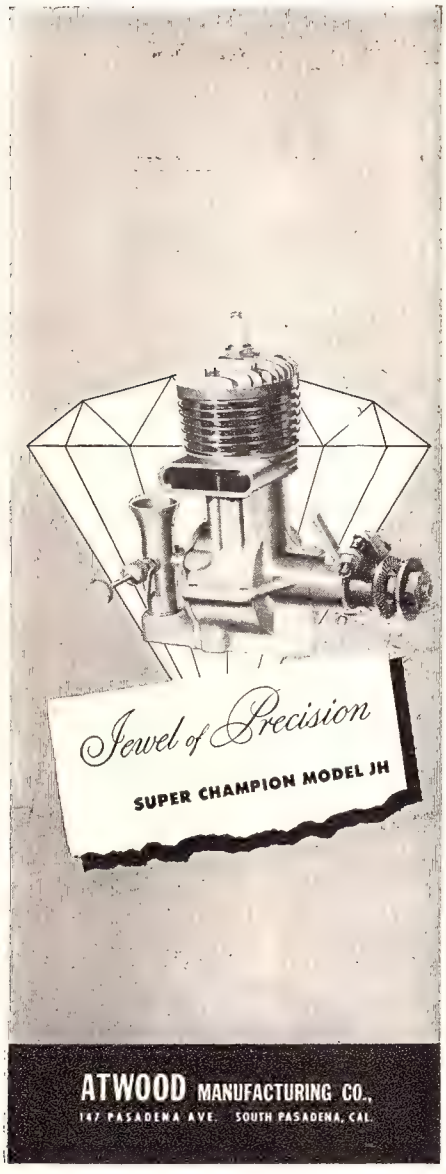

1/4" SHEET BALSA LEADING EDGE
1/8" STOVE BOLTS
1/4" SHEET BALSA RIBS
1/8" PLYWOOD RIB
1/8" PLYWOOD BULKHEAD
R-2
R-1
LR-1
3/16" X 3/8" AUX. SPAR
LR-1
RR-1
3/8" SHEET BALSA TRAILING EDGE
1/2" SQUARES
HEAVY CLOTH HINGES
.049 WIRE CONTROL HORN
R-3
R-2
3/16" SHEET BALSA STABILIZER AND ELEVATOR
1/2" SQUARES
CUT LR-1 ON THIS LINE
" RR-1 " " "



LEGEND

1. ENGINE (.60 CU. IN. DISPLACEMENT)
2. COIL
3. "TOPPING" PLASTIC PROPELLER
4. DURAL BATTERY CASE
5. TRANSPARENT PLASTIC CANOPY
6. PLYWOOD MAIN SPAR
7. BEARING FOUNDATION (1/16" BRASS)
8. STEEL EXTENSION SHAFT
9. MAHOGANY ENGINE MOUNTS
10. SHEET BALSA TRAILING EDGE
11. SHEET BALSA LEADING EDGE
12. 3/32" SHEET WING COVERING
13. 3/16" SOLID TAIL SURFACES

WALTER A. MUSCIANO



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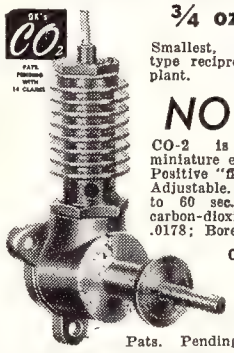

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Herkimer TOOL AND MODEL WORKS, INC. (MC-8), Herkimer, New York

CO-2 is made and guaranteed by the makers of the famous "OK" line.

Photos by Wagner

Left—Ronald Kirk and his DeLong powered original which placed third in Class B Speed at the Flying Bison's Contest. Right—Red McCarthy and Dolson Moshier using starter on Dolson's Hornet powered original.

"FLYING BISONS" FLY HIGH

THE Flying Bisons of Buffalo, N. Y., recently held a contest and due to high winds, all times were low. Results were as follows: Speed A: DeBolt, 74 mph; Jordan, 64 mph. Speed B: DeBolt, 94 mph; McCarthy, 89 mph; Kirk, 82 mph. Speed Small C (.30-.50): DeBolt, 104 mph; Malliard, 68 mph; Kreihdal, 58 mph. Speed C: Campiony, 113.87 mph; Wagner, 108 mph; Millet, 107 mph. Stunt (AMA Point System): Millet, 81; Kreihdal, 76; DeBolt, 68.

HEINKEL—112

(*Continued from page 31*)

held in place on the shaft with a taper pin after the shaft has been inserted through the bearings. The prop front washer and nut are the same items supplied with engine. The portion of the fuselage covered by the radiator is carved out in order to install and remove engine. Use ¼" sheet balsa for radiator sides and make the bottom as a hatch. The removable portion of the fuselage nose is held in place with extra large dress snaps.

A plywood spar the full depth of the wing is used and the ribs are cemented on each side followed by the leading and trailing edges. Care should be taken to put correct ribs on each side because the spar notches on both sides are not alike. Wing roots are built onto the fuselage and the 3/32" landing gear struts attached to it. They should be bound to the structure with strong thread and then coated with cement. The outer wing panels are now added. All spar joints should be given several applications of cement to seal on the ⅛" stove bolts. The ⅜" x 3/16" auxiliary spar may be added next. 3/32" sheet balsa is used for the wing covering and this is sanded smooth and covered with light silkspan and a coat of clear dope. Addition of the fin and rudder completes the assembly.

A standard two-bladed prop may be used with a soft balsa spinner; however, the "Topping" plastic three-bladed high pitch propeller is ideal for this model and was used on the original with a few blade modifications. It pays to finish a control job with a high polish. Most modelers have their own process so the subject will be touched very lightly. The grain must be filled with wood filler (the silkspan helps) and then the model is colored and rubbed to a gloss with rubbing compound. The model was painted in very attractive pre-war dazzle camouflage as follows: The entire bottom is very light grey while the side and top is in zig-zag splotches of royal blue, canary yellow and vermillion. The spinner is red and propeller is black. Only when the model is finished, is the plastic canopy cemented to the fuselage.

Center of gravity should be located on the forward control line. Do not attempt to fly the model if it does not balance at this point. Steel wire of at least .016" should be used for control lines; fish line is not recommended. The flying circle radius should be about 75 feet.

PLANE MODEL WINNERS

Many books are available on the construction of model airplanes. The majority of these books contain models, both good and bad, which may or *may not* have been flight-tested or actually constructed.

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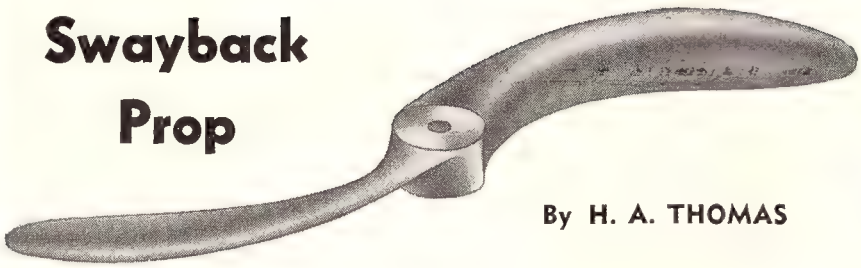
Swayback Prop

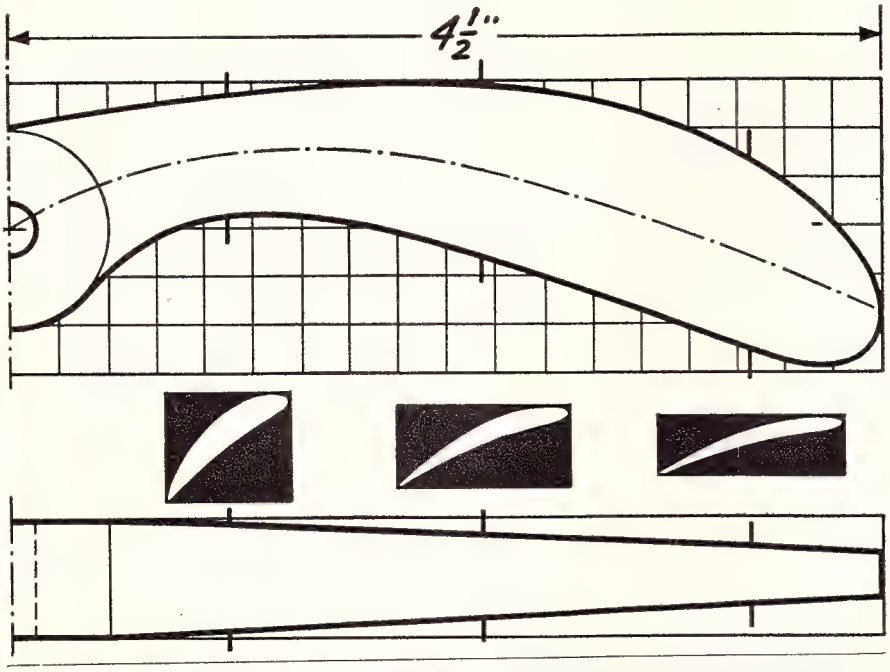


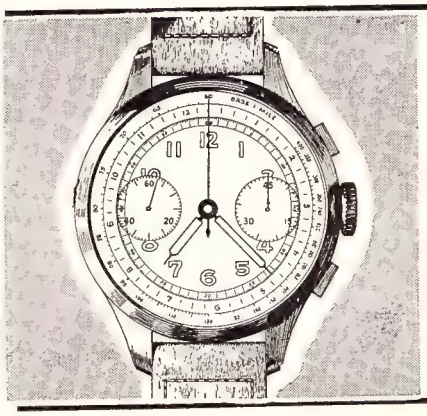
By H. A. THOMAS

DON'T laugh out loud, fellas! Wait until you have carved a propeller like this one and tried it alongside conventional ones. The idea isn't just a brainstorm, but in fact is a serious effort at improving the ordinary propeller for high speed flight conditions.

Recently Curtiss-Wright announced a new type of propeller designed "to carry propeller efficiencies at high speeds into the 700 MPH range." The AAF is sponsoring the project. Blades were curved in a swept-back manner giving an odd, even humorous appearance. So we laid out a two-blade version for a control-line model and carved it out of a piece of cherry wood. Our test model with conventional propeller was clocked at 58 MPH and after the new curved blade prop was mounted, speed increased to 71 MPH. We feel that the propeller warrants further experimentation and may hold real promise as a free-flight project.

If you are interested, first trace the blade pattern to a block of hardwood, drill the shaft hole and bandsaw the face view to outline. Then mark the blade taper and bandsaw the block sides accordingly. Using a sharp drawknife, with the prop held in a bench vise, carve the lower surfaces then the upper ones. Rasp the blades to contours and balance the propeller. Continue to check the balance during sanding and finishing. Several coats of wood filler, followed by lacquer and polishing with rubbing compound will complete the propeller. Block dimensions indicated will produce a propeller suitable for engines of .35 to .49 cu. in. displacement.





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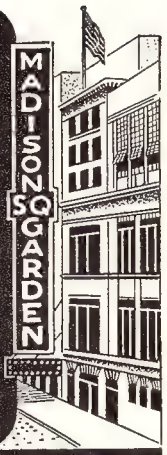

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BATTERY	2.1 oz.	NO
CONDENSER	.4 oz.	NO
SWITCH	.5 oz.	NO
BATTERY HOLDER	.2 oz.	NO
WIRES	.3 oz.	NO

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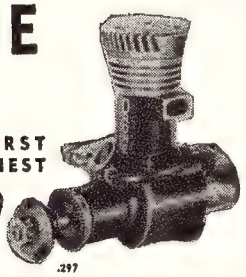

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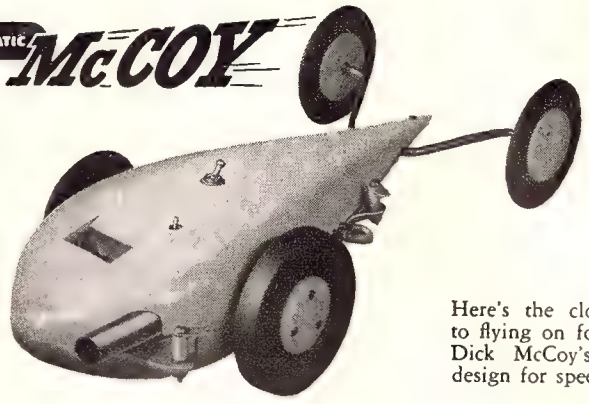

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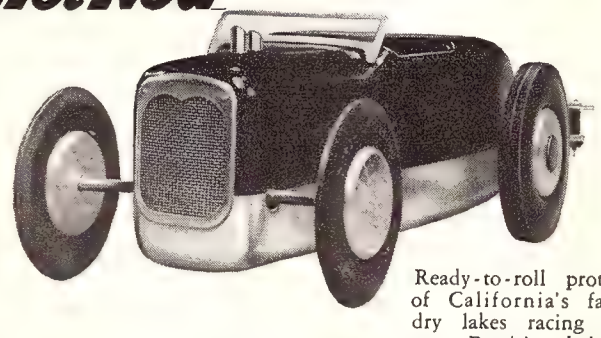

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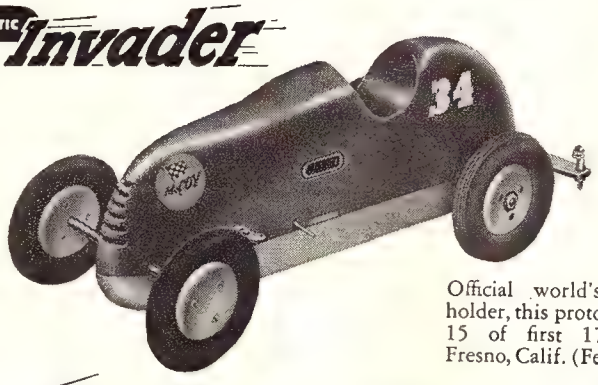

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AMA NATIONALS

THE 16th National Airplane Championships are now upon us and will be run off August 18th through 22nd, at Minneapolis and Monticello, Minn. Indoor events will take place at the University of Minnesota Field House and the outdoor events at the Monticello Airport, 35 miles northwest of Minneapolis. The Nationals this year are again sanctioned by the AMA and sponsored by the American Legion and Forty and Eight of Minnesota. Chairman of the Contest Committee is Clarence W. Hinck, with Paul Ring as Contest Director; William Crockett, Meet Manager.

Indoor events will cover Stick, Cabin and Glider. Outdoor events include Mulvihill Stick and Stout Fuselage; Wakefield Cabin Rubber-powered events; Class A, B, C Free Flight Gas; Control-Line Speed Class I & II; Class III; Class IV & V; Class VI; Control-Line Stunt, Flying Scale (rubber and gas powered): Radio Control and Towline Glider. As an added event, there will be Control-Line Speed Jet Propelled.

The Nationals are open to *all* who pay their entry fee of $1.00 plus 25c per event entered. An outstanding victory banquet will be held Friday evening, Aug. 22nd, at which time the trophies and prizes will be awarded to Champions in the Junior (under 16 yrs. of age), Senior (16-21) and Open (over 21 years of age) classes of the seventeen events of competition.

AMA RECORDS AT SALEM

THE Salem "Cloud Chasers" are really proud of the fact that two AMA records were established at their recent U-Control contest held in Salem, Oregon, June 22nd. Hank Cole, of the Seattle Club, raised the previous record of 80.3 mph in the Class A Speed to 83.5 mph, using an original design powered with an Arden 19. Jack Hudspeth topped the Class D Junior record by 7 mph with his Hornet-powered original. NGMA records were also raised in all four speed classes.

CLASS D SPEED	MPH
C. Hollinger, Seattle (Hornet-Orig)	120.00
J. Hudspeth, Portland (Hornet-Orig)	104.00
J. Loval, Seattle (McCoy-Orig)	103.00

CLASS C SPEED	
G. Thomas, Tacoma (McCoy 49-Orig)	97.50
R. Smith, Portland (McCoy 49-Orig)	89.00
N. Wilson, Vancouver (McCoy 49-Orig)	85.50

CLASS B SPEED	
H. Jensen, Portland (K&B-Orig)	94.00
C. Hollinger, Seattle (DeLong-Orig)	89.00
L. Johnson, Seattle (DeLong-Orig)	81.00

CLASS A SPEED	
H. Cole, Seattle (Arden 19-Orig)	83.50
C. Hollinger, Seattle (Bantam-Orig)	78.00
R. Smith, Portland (Arden 19-Sharpie)	76.00

STUNT

1. Frank Motely, Portland (Tiger-Fireball)
2. J. Hudspeth, Portland (DeLong-Fireball)
3. D. Hudspeth, Portland (Midget-Fireball)

SCALE

1. Willson 2. Cuyton 3. Fair

SOUTHERN REGIONALS

(*Continued from page 8*)

Club and passed word around that his hometown was about to build a new track for the local boys. C. E. Simmons stopped over in New Orleans July 4th to get in a practice run with the boys and then joined the fellows from the Crescent City for the ride to Monroe. Once there, he joined the other boys from Atlanta who made a determined effort to gather some trophies for the Georgia people to admire. The Atlanta Club had some fast cars entered and were a threat from start to finish. Bill Arnold looked like a real contender for top honors with his special-built proto, but just when the little car began to reach its peak, it threw a front tire and had to be flagged down.

The New Orleans aggregation, who have had the "Indian Sign" on the Monroe boys in the last few races, had to get down to real serious competition, but managed to pick up a trophy or two with the aid of "Pappy" Jelk's two old reliables.

Corporal Walt Glattharr, who had to work pretty hard on his C.O. for a pass to attend the meet, came in for a piece of hard luck when he broke a crankshaft while speeding at 107 MPH in the Saturday trial runs. Walt used his persuasive powers on Fran Brennan who finally broke down and stripped the shaft out of a hot Hornet and loaned it to him. There followed a frenzied night session in the workshop, but Glattharr was ready when called to the starting line on Sunday and walked off with a trophy after pushing his little speedster to more than 105 MPH.

Frank Robertson from Houston, Texas, brought his little "Snuffy" up for an afternoon's ride and how that little speed demon did ride! "Snuffy" was temperamental in the trial runs, but Robertson gave it a "going over" and it was ready to show speed on Sunday. It romped home with a first place in the quarter and one-mile events with speeds of 106.38 MPH and 102.94 MPH respectively.

Otis Cline from Cartesville, Mo., was the hard luck man of the meet. He broke a crankshaft in the early trials and then spent the rest of the time tearing down his other cars and building up one good car to enter in the races only to be squeezed out of the trophy parade in the final running.

Preliminary indications showed a large field of entrants and plans were made to illuminate the track for night running. But when the signal sounded for the start, several of the expected arrivals failed to materialize and the 'Senator" is still wondering what happened to Jack Ray and his crew from Shelbyville, Tenn., and the fellows from Shreveport, La. *Really fellas, you missed a good time!*

SPUR GEAR (¼-Mile)	MPH
1. Frank Matthews	110.15
2. Walt Glattharr	105.75
3. J. Coppage	105.14
4. Glen Matthews	104.98
5. Frank Robertson	103.09
6. Fran Brennan	102.36
7. Roy McCue	100.89
8. John Jelks	100.44
9. Morris Eakin	98.46
10. C. R. Dunn	96.35
11. Otis Cline	95.03

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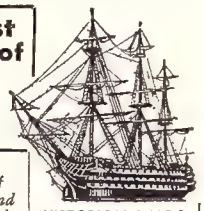

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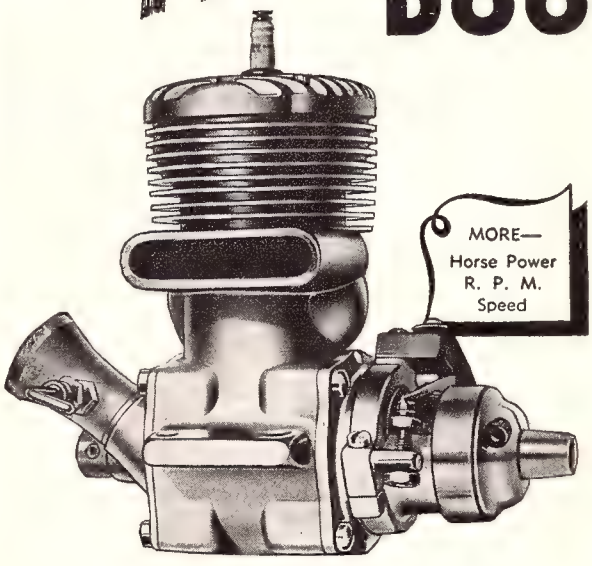

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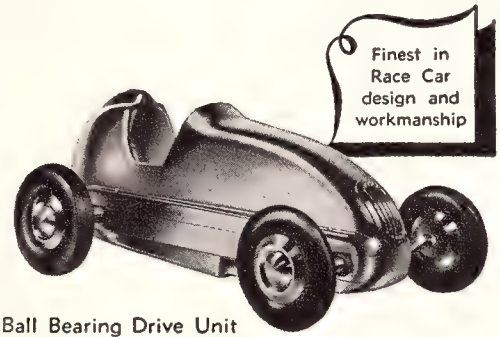

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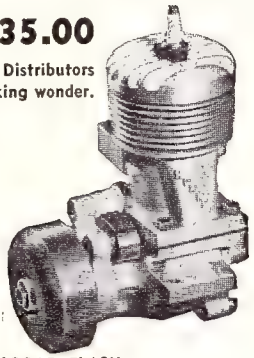

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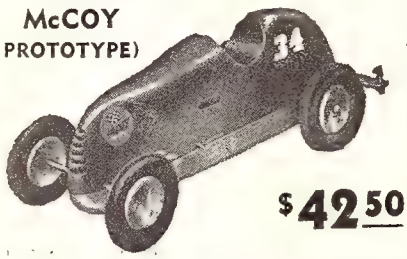

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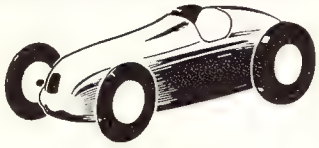

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PROTO (¼-Mile)

1.	Frank Robertson	106.38
2.	Frank Matthews	101.46
3.	Fran Brennan	99.44
4.	Cecil Simmons	97.50
5.	Glen Matthews	97.09
6.	Guy Dean	96.67
7.	John Jelks	95.94
8.	Robert Sargent	95.54
9.	Paul Allred	91.27
10.	John Coppage	88.84
11.	Otis Cline	86.36
12.	Bill Wunderlich	84.82
13.	Bill Arnold	83.17
14.	Otis Cline	82.87
15.	C. A. Eakin	82.41
16.	S. Mitchell	73.65

SPUR GEAR (1-Mile)

1.	Frank Matthews	112.11
2.	Glen Matthews	106.47
3.	Walt Glattharr	105.91
4.	Frank Robertson	104.25
5.	John Jelks	102.47
6.	Fred Keller	101.35
7.	Fran Brennan	99.75
8.	Morris Eakin	97.82
9.	E. A. Newton	93.04
10.	Otis Cline	90.42
11.	Roy McCue	66.70

PROTO (1-Mile)

1.	Frank Robertson	102.94
2.	John Coppage	101.09
3.	Glen Matthews	100.78
4.	Fran Brennan	100.25
5.	Frank Matthews	97.95
6.	Mrs. Matthews	96.59
7.	Cecil Simmons	96.12
8.	John Jelks	95.84
9.	Bill Arnold	93.21
10.	Paul Allred	92.73
11.	C. A. Eakin	88.56
12.	Bill Wunderlich	78.48
13.	Slug Mitchell	76.90

LEHIGH VALLEY OPENS NEW TRACK

THE Lehigh Valley MRCA of Pennsylvania invited a few of the local clubs on June 28th to race on their newly finished concrete track. The ribbon is a 70-ft. diameter, 3-ft wide job, and is level with a rough finish to allow the cars full traction, even with castor oil and rubber on it. The Reading Club (Pa.) and the Tri-Cities Club (N. Y.) were represented and the boys really appreciate these fellows driving the great distance and putting on a good show.

The Lehigh Club plans to hold one big meet this year at their track, so follow these pages for details. They are also interested in loop racing, so contact Jimi Petrakis, 447 Beech St., Bethlehem, Pa.

A loud speaker was used (*we don't mean Howard*) and the boys held their drawing, which helped a good deal in financing the new track. Howard Fox did the honors on the speaker,, insulting his rivals all afternoon (*J. Cululi and Jimi*). Running for the day wasn't too bad, using a 5/32" cable (stranded), the only cable on hand. They all had fun as well as their troubles, even though Howard refused to run his buddies' car, Abe Snyder, because he claimed it was too fast for the rest of the speeds. Results follow:

SPUR GEAR	MPH
C. Lieb, Mathews, Hornet	100.00
C. Noll, McCoy, McCoy	95.74
F. Wolfe, Hot Rod, McCoy	91.56
A. Tarquin, Dooling, Cyclone	86.84

PROTO

H. Fox, Own, Hornet	94.74
F. Wolfe, Pacemaker, McCoy	94.13
R. Bell, Own, Hornet	90.09
D. Buffington, Invader, Hornet	89.21
A. Myers, Dooling, Hornet	87.34
J. Cululi, Invader, Hornet	86.00
J. Petrakis, Pacemaker, Hornet	85.00

RAIL RACING?

By BILL DECKER

RAIL Racing? That's a question lots of clubs all over the country are asking themselves, and some have the answers right and some wrong. I've had so many inquiries that I won't be able to answer half of them and do it right, so me thinks I ought to sit down to my portable, hunt and poke, and let everyone in on it, via the Model Craftsman.

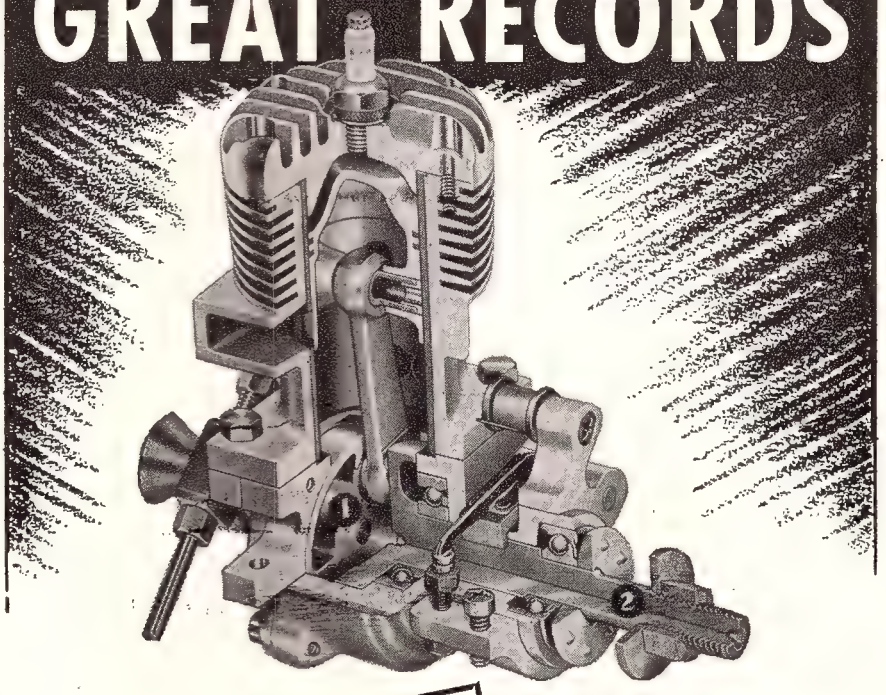
This write-up ain't going to be like my others with race results and trials and tribulations of my fellow racers, but more like I was talking to you in person and telling you what we have done and are doing. I am going to write like you came over with your bucket of bolts and we started talking about racing, racing and more RACING. Before long, you lead me to it and say, "Bill, we're going to build a track out in our town and we don't know which kind to build . . . Rail or Cable. We've heard lots about each but don't really know what we are getting into. Can you tell me how we can handle the building of a rail track?"

After a deep breath, I start . . . at which time the wife picks up her knitting and heads for the other room, mumbling something *"all that again"* Guess she heard it so much she knows it by heart.

"To begin with, Joe, I ought to tell you how this all came about and then you will have the whole story. I an seven other boys broke away from the club we were racing in cause the track was old and not banked near high enough for some of the fast cars. It was brought up time and time again that we needed a new track and ought to do something about it. We figured that if each member would put $50 into the kitty that we would have enough to build a new track. Lots of the boys all but blew their tops. Fifty bucks, why that was a fortune! So the whole idea slides into the dust. So one day, a few of us that really wanted that new track to race on, got together and talked it over. Then several more were asked what they thought and before we knew it we had eight guys that had one thought in mind. A NEW RAIL TRACK! We set a deadline and each man was to bring all the spare dough he could get to put into a real set-up. Deadline came and we held our meeting. Each looked at the other and then we dug down into our pockets and set the dough on the table. *Lock the door!* . . . someone yells as $1500 fell on the desk. Guess we all were surprised at what came out. Looked like the boys an me were getting serious. That's when the BADGER MODEL RACING ASSOCIATION was born. We resigned from the old club and exerted all our time and energy into the new set-up.

"An election of officers took place immediately with the following results: Ray Ziegler, Pres.; Herb Dahnke, V-Pres.; Erv. Kohloff, Sec.; Frank Harvey, Treas.; and yours truly, Cor. Sec. A Constitution was drawn up and a checking account opened. At last we

Good Reasons For
GREAT RECORDS



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These are a few of many HORNET records:

● Spur Gear Record, Waukegan, Ill., Sept. 1, John Crossan, V car Hornet powered, 118.27; Dale Martel, Proto Hornet powered, 113.21; Loose Memorial, Fred Luning, Spur Gear Hornet powered, 118.73; W. T. Thomas, Jr., New Spur Gear Record, Own Car, Hornet powered, at Eustis, Florida, 120.32.

● Speed Boats: Joe May, Detroit, Mich., July 4-6, 1946, new world record in Class D and E, speed 65.53 m.p.h., winning Gar Wood trophy and Model Craftsman plaque.

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were on our way, and it looked like we had everything it took. We had eight good men from different walks of life and each was going to play a major part of this job. One is a Tool and Die Maker, another is a Lawyer, two more are Draftsmen, another is a Machine Inspector, one is a Machinist, another a Photographic Plate Maker and last, a Plastics Man. Yep, all kinds of people like this hobby and those are the kind we had.

"The next step was to get prices on material and a place to set the track. That location was a stinker. At least it was until we got smart and approached it from a new angle. Noise seemed to be our biggest enemy in getting a location real close to town. So why not try to get a spot near where there is considerable noise already. The answer was, "next to an airport"! We asked and finally found the party that owned a lot of property just across the road. *Result* . . . we get a swell five-year lease with little or no restrictions. Building permits were easy, so we're all set.

"Next comes material for the track. . . . All of us had friends in this business and that. Before we knew it, we had all material sources lined up and ordering began. We cut out a big order of wood and ordered steel instead. All the jacks are being made of ⅔ steel angle and ⅓ 2x4. All jacks are built in the members' basements, bolted together and painted ready to install when the time comes. Rail was formed by a local fabricator and was drilled and countersunk by the members.

"The two draftsmen with the help of a couple of good engineers, drew up a real track, 86° degrees on the ends and 20° on the straightaway. It will be ½12th mile long, four rails with all the latest stuff and things.

"Joe, I'm telling you, it's amazing what a few guys can do when they have their heart and soul in it. These boys and I want to race rail and nothing short of an earthquake will stop us! Any group can do the same thing. Oh, you think that was a lot of dough to pull from a small group? Well it was, but when you kick in with the kinda money we kick in for a motor and car, plus the tools and equipment to keep the car running you should have a few bucks to blow in to assure you of a good place to run and enjoy that car. Anyhow, it's not like a total loss when we invested that dough, because we think we can put on a show good enough to charge these people admission just to watch us. We racing on rail can give the public a real race between four cars, and not just one after the other, time against time. Out of those admissions, comes dividends for our investment!

"Now . . . for the boys that couldn't put in any money but still want to race on that new track, we have a Class A membership open to them. The original eight are Charter Members. A race fan becomes a Class A member by putting in either 50 hours of work or $50 in cash, or a portion of each. He then becomes a Class A man with all privileges of the track and the only cost to him after that will be $1.00 per Sunday per car. No dues, no work periods and no meetings to attend. All he does is to pay his buck and race.

"Yes Joe, we are doing it and so can you and your boys. Erv and I are going to draw up the plans for our track in a nice neat form and if any of the clubs want a set they can write to me and I will personally mail them a set. There will be a small charge for these plans as we went through considerable time and expense to get them in their present condition.

"We plan to race under present National and International Rules. The whole thing boils down to this, if you can get a few guys together that are willing to cooperate with each other and do their share of the work, a Rail Track is comparatively easy to build. Even if it is a little tough, just think of the fun you will be able to have for several seasons after your initial work when you won't have to do any or very little work on the track.

So the new Rail Track which is being built by the Badger Model Racing Association just about cinches Milwaukee for the No. 1 City for Model Race Car Racing. Milwaukee has *two* Rail Tracks and *two* Cable Tracks. What other city in the world can boast of having four tracks!

The New Badger Rail Track is located on Highways 41 and Silver Spring Road just across from the Curtiss-Wright Airport, seven miles from the heart of Milwaukee.

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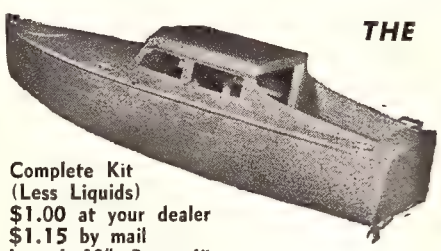

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RECORDS AT WAUKEGAN

(Continued from page 8)

a pleasure to have Bob Mulhall, Col. L. A. Smith, Stan Prussian and O. L. Frost (Mobile, Alabama) with us. Bob didn't have a car with him, but he seemed to get a kick out of the high speeds turned in.

SPUR GEAR (¼ & ½-Mile)

Name	Car-Motor	Best MPH
1. W. Borden, Own-Hornet		120.89
W. Borden (2nd entry), Own-Hornet		118.11
2. P. Fleener, Borden Spc.-Hornet		120.16
3. M. Davis, Borden Spc.-Hornet		119.53
4. G. Coffield, Sr., Coffield-Coffield		117.50
5. G. Coffield, Jr., Coffield-Coffield		116.88
6. E. Stump, Coffield-Hornet		115.83
7. J. Wetzel, McCoy-McCoy		115.60
8. J. Crossan, Coffield-Coffield		113.08
9. C. Sapp, Own-Hornet		112.71
10. J. Carlson, V-Car-Hornet		112.28
11. S. Prussian, McCoy-Hornet		112.07
12. V. Paul, Hornet		111.80

Borden made a quarter mile national record attempt and turned it in 7.41 or 121.46 mph. Also the ½ mile 120.89.

PROTO (¼ & ½ Mile)

	Best MPH
1. E. Behm, Fairabend-Hornet	112.50
2. W. Pousho, Own-Hornet	111.38
3. J. Brake, Own-Hornet	110.83
4. C. Johnson, Own-Hornet	110.21
5. Col. L. A. Smith, Pacemaker-Hornet	108.43
6. M. Davis, Pacemaker-Hornet	107.91
7. G. Francis, Fox-Hornet	107.78
8. Major Leonard, Pacemaker-Hornet	107.27
9. D. Martell, Own-Hornet	106.50
10. A. Sutyak, Pacemaker-McCoy	105.88
11. J. Carlson, Pacemaker-Hornet	104.40
12. R. Stevens, Pacemaker-Hornet	104.04
13. P. Fleener, Pacemaker-Hornet	103.92
14. M. Geary, Pacemaker-Hornet	102.62
15. M. Sechman, Pacemaker-Hornet	102.50

J. Brake, Waukegan (Own Car-Hornet) ½ mile in 16.34 or 110.15 mph—a national record for one-half

PRESENT SPEED RECORDS

THIS is your standing box score representing AMRCA speed records as of July 15, 1947. These are the present existing records as reported to this office, showing highest speeds established on both cable and rail tracks, type car and engine used, together with location and date of established record:

1/16 MILE CABLE TRACK

SPUR (¼ Mile): Dick McCoy, San Francisco, July 7, 1946—116.73 MPH (McCoy Car, McCoy Engine)

PROTO (¼ Mile): Howard Lee, San Francisco, July 7, 1946—108.95 MPH (Own Design Car, Hornet Engine)

STREAMLINE (¼ Mile): Jim Gilmore, San Francisco, July 7, 1946 — 103.32 MPH (Special, Hornet Engine)

1/24th MILE CABLE TRACK

SPUR* (¼ Mile): W. Thomas, Jr., Eustis, Feb. 22, 1947—120.32 MPH (Own Design Car, Hornet Engine)

SPUR (½ Mile): Warren Borden, Waukegan, July 6, 1947—120.89 MPH (V-Car, Hornet Engine)

SPUR (1 Mile): J. Crossan, Detroit, Aug. 2, 1946—113.38 MPH (V-Car, Hornet Engine)

PROTO (¼ Mile): Dale Martell, Waukegan, Ill., Sept. 1, 1946—113.21 MPH (Own Design Car, Hornet Engine)

PROTO (½ Mile): J. Brake, Waukegan, Ill., July 6, 1947—110.15 MPH (Own Design Car, Hornet Engine)

PROTO (1 Mile): Howard Lee, Detroit, Aug. 2, 1946—109.02 MPH (Own Design Car, Hornet Engine)

STREAMLINER (¼ Mile): Jim Gilmore, Detroit, Aug. 3, 1946—104.98 MPH (Special, Hornet Engine)

STREAMLINER (½ Mile): Jim Gilmore, Detroit, Aug. 1, 1946—102.50 MPH (Special, Hornet Engine)

STREAMLINER (1 Mile): Jim Gilmore, Detroit, Aug. 2, 1946—100.44 MPH (Special, Hornet Engine)

1/16th MILE RAIL TRACK

STREAMLINE: W. Weller, Chicago, Aug. 25, 1946—79.30 MPH (Hornet Engine Used)

PROTO: Frank Pawlikowski, Chicago, May 24, 1947—80.86 MPH

1/12th MILE RAIL TRACK

PROTO (¼ Mile): Dick McCoy, Fresno, Calif., July 6, 1947—95.13 MPH (Own Car, McCoy Engine)

* *Warren Borden turned the quarter mile in 121.46 MPH at Waukegan, Ill., July 6, 1947, yet to be verified by AMRCA.*

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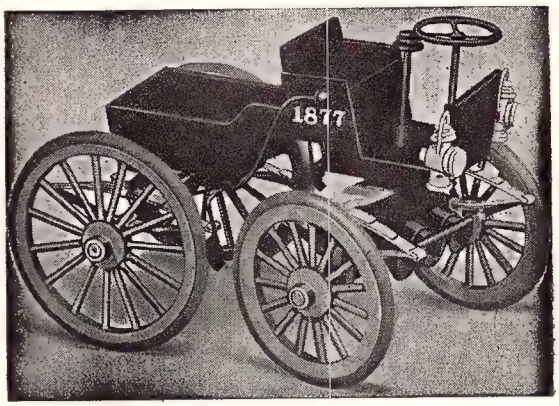

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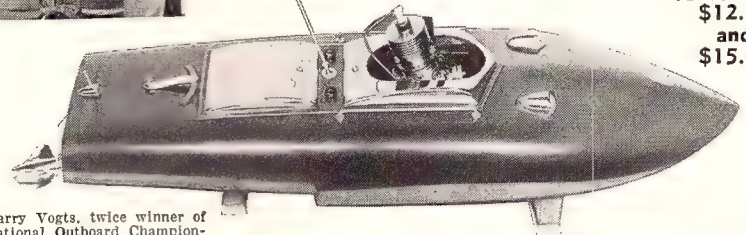

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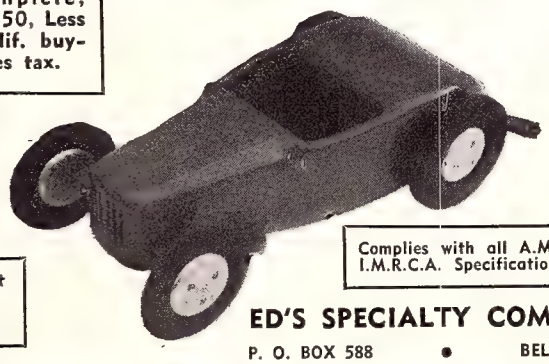

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O GAUGE

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OO GAUGE

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Two Rail Signals ..... Dec. '46
Where to Put your Feeders ..... Dec. '46
Master Control Board ..... Apr. '47
Interlocking Without Relays ..... May '47

TROLLEYS

Model Cattle Car (Prototype Dimensions) ..... July '44
Shooting Trouble on HO Motor Trucks ..... Oct. '44
Trolley Wirework ..... Nov. '44
Interurban Depot & Substation ..... Feb. '45
Hudson & Manhattan Tube Cars ..... Mar. '45
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Advantages of Inch Scale ..... Mar. '45
Cab, Coupler, Drawbar Pocket, Bell, Dome (½" sc.) ..... Apr. '45
Boiler Construction Hints ..... May '45
Assembly & Connections (½" sc.) ..... June '45
Steam Driven Water Pump ..... Oct., Dec. '45, Feb. '46
Stationary Steam Engine ..... July thru Oct. '46

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Hi-Rail-Cantilever & Steel Arch Bridges ..... July '44
Suspension Bridges ..... Aug. '44
Adding Human Interest to Your Layout ..... Sept. '44
Wherefore "Hi-Rail"? ..... Oct. '44
Flag Stops ..... Nov. '44
"Combination" Stations ..... Feb. '45
Smooth Scaling ..... Mar. '45
Car Kinks ..... May '45
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Realistic Tinplate Cars ..... Dec. '45, Jan. '46
Tin-Types "Trued to Life" ..... June '45
Along the Tinplate Track ..... Monthly Feature

AIRPLANES

"Tiger Meat" Class C Guide Liner (Millet & DeBolt) ..... Oct. '45
Dizzy "B", U Control (Greene) ..... Nov. '45
"Butch", Class C Guide Liner (DeBolt) ..... Dec. '45
"Moldy Molecule", Class B & C Guide Liner (DeBolt & Thomasian) ..... Jan. '46
"Thunderwin", U Control (McElwee) ..... May '46
The "Atomic", U Control (Shulman) ..... June '46
"Pirate", Control Liner (McGovern) ..... Sept. '46
Your Engines (Class A & B Survey) ..... Aug. 46
Your Engines (Class C Survey) ..... Sept. '46
Engine Maintenance & Operation ..... Sept. '46

ELECTRICAL ARTICLES

Home-Made Telephone ..... July, Aug. '44
Battery Charging Hints ..... Aug. '44
Switch Motors from Doorbells ..... Oct. '44
Polarity Indicator ..... Oct. '44
A. C. Power Supply ..... Nov. '44
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RACE CARS

Molding Car Bodies ..... July '44
Getting Ready for Racing ..... Mar. '45
Building a Model Race Car ..... May thru. Nov. '45
How to Get More Speed ..... May '45
Trouble Shooting ..... Feb. '46
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Test Car #1 ..... Apr. '46
Test Car #2 ..... July '46
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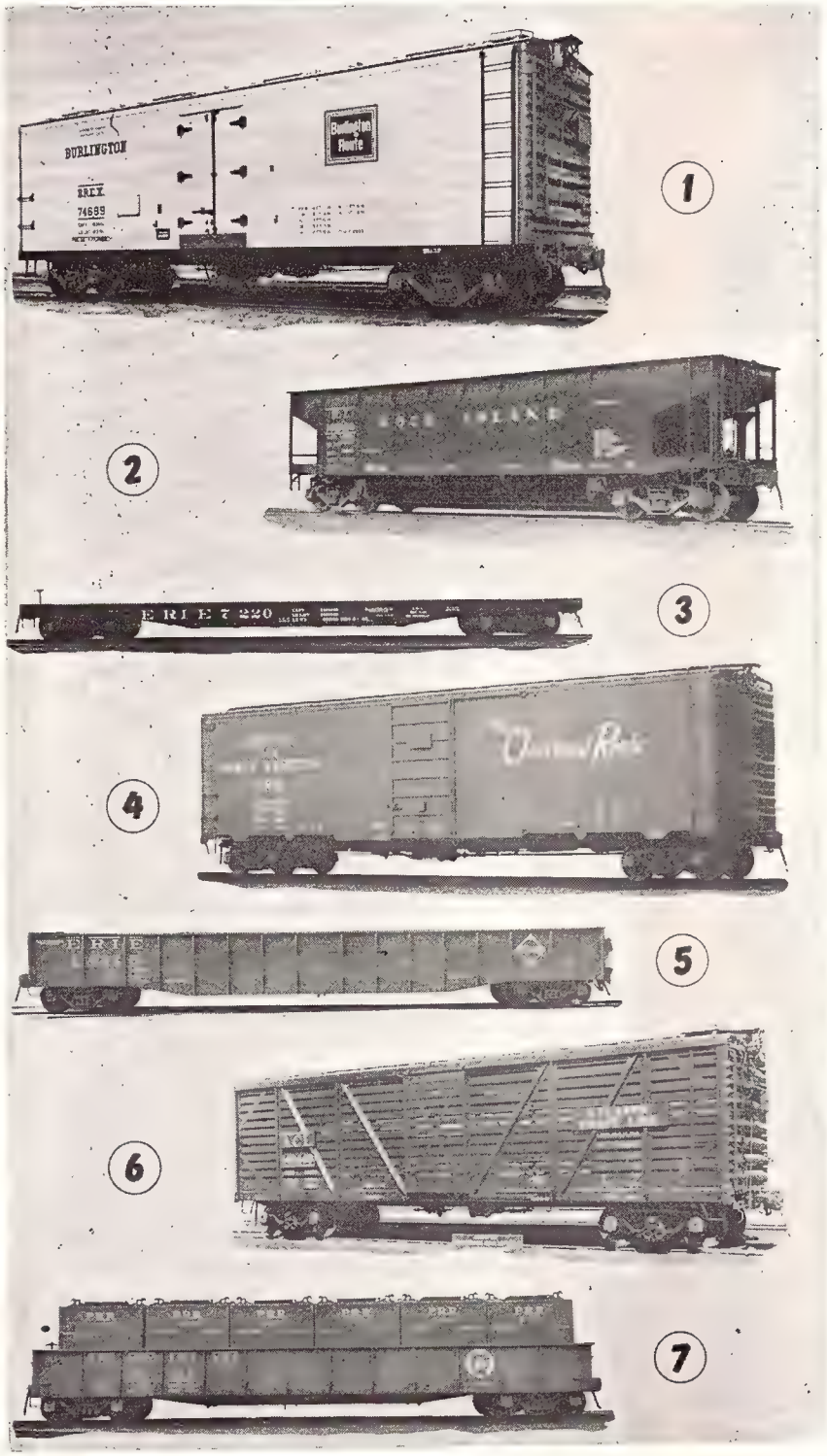

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7

This month we show photographs of seven different pieces of rolling stock, all of which are found on any freight train. All of you know the familiar caboose or crummy and the everyday tank car, but can you distinguish between the other cars found in a consist? You should be able to rattle these off at a glance, but test yourself anyway and then check with the correct answers given upside down at the right.

ANSWERS

1. Refrigerator Car
2. Hopper Car
3. Flat Car
4. Box Car
5. Gondola Car
6. Stock Car
7. Container Car

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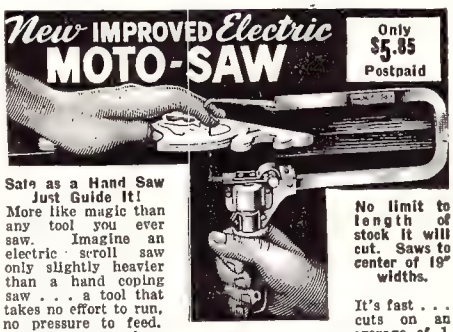

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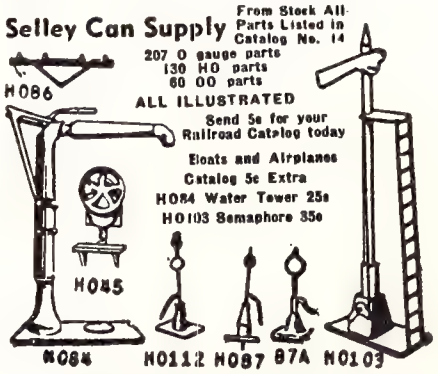

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MODEL BUNGALOWS

(*Continued from page 24*)

propriately (*consider the kitchen*). Four sides of the stack are cut in one piece as indicated in the sketch. These are scored and cemented into a hollow square and when dry, are wrapped with building paper. Some excess should be left at the top. This is notched at the corners, dabbed with cement on its inside, and pushed down into the chimney with a pencil. A soil pipe by the bathroom as well as rain conductors can be formed from wire and fastened in their place.

Steps depend on height of the foundation, and should be merely one landing at the minimum. If made higher, steps are made up as indicated. Landing and steps are made in one piece and folded up. This is cemented under the door, and the sides are fastened to the house and steps, followed by tops and ends of the sides. A terrace as shown on one house, can be covered with brick paper with bricks running diagonally.

Roofs are marked with pencil lines spaced roughly a scale foot apart and running at opposing 45° angles. This indicates shingles which can be grayed slightly by smearing the side of a pencil all over the roof.

Little has been said about color. The easiest bristol to obtain is white, but other colors are available which can be used to advantage.

The proper setting for the house will improve its appearance. If possible, some difference in elevation is desirable. Fortunately, I was able to utilize an old turntable pit already cut in the platform as a sort of sunken garden. You might be able to incorporate some little slope or else place the house on a terrace ostensibly made from the dirt excavated from the cellar, but actually on a block of wood. Both this and the surrounding grounds should be covered with grass. Cheap turkish toweling painted green with paint marks all running one way, with not too much attempt at uniformity of color to look like the paths of a lawnmower. Hedges and trees are made up from rubber sponge or sprays of goldenrod and other plants dyed to proper colors.

Walks can be made from random shapes of black or gray bristol "flagstone" or from strips of bristol "cement" marked off into squares. Set these into the grass, or more easily, place them on top the grass. A small mirror makes an excellent reflecting pool, while a tack topped with a disc of white bristol serves as a bird-bath or sun dial. When the expanse of grass gets too large, I like to scatter a few cast lead sheep around to keep down the foliage. Also include a few people, and maybe a cast dog or two.

Backyards should include lawn furniture. Some alleged Adirondack chairs for HO were made up from two squares of bristol (*for arms and legs*) between which I sandwiched an L-shape of the same material for back and seat. The table was two L's of bristol cemented to the bottom of a disc to form an X. A garbage can, made from a bit of heavy wire or small dowel, should adorn each back step, while backyards might have clothes poles made of wire. One of my yards even has washline (*thread*) with clothes hanging out with the aid of cement rather than clothespins. *This exhibit seems to intrigue the lady visitors!* Almost any clothing or linen can be simulated with cut paper, taking care to cut in the proper *droop* in the case of big pieces, such as sheets. (*I found pink chewing gum wrappers good enough to simulate those feminine dainties.*) Clothes props can be splints of wood.

Some fences will probably be needed. My back fences, abutting the railroad right-of-way are made of wire screening since the railroad paid for them, but the "between-properties" fences are made of pickets. Picket fence can be bought at a fabulous figure, but it is flat. I made up pickets without the point on top merely by slicing them off a strip of bristol as wide as the pickets were to be high. Two other strips of narrow bristol were used as the runners to hold the pickets. Gates are best cemented in an open position. An arbor can be made up by cutting out two U's from bristol and keeping them properly separated with more pickets.

The subject of lighting has been left until last. Please don't just cut a hole in the base and insert one of a string of lights and let it go at that! Take a look at lighted houses some night when you are out. The entire house is seldom lighted at one time unless electricity is included with the rent. Decide on a time of day—or night—and then light accordingly. In early evening, living room, dining room and kitchen would all be lighted. Later, just the living room, and later still the bedrooms and bath. The attic and cellar will seldom be illuminated unless the owner has a model railroad there! This leads to the subject of installing partitions which is why the floor plan (which could be simplified further) of each of my bungalows is included. A floor would have to be installed at proper floor level, and the walls built above that. I'd suggest giving the dark rooms a ceiling of bristol board and the room to be lighted a ceiling of thin paper, white or manilla. The light could then be placed in the attic in a lightproof (on sides and top) box. This can be made accessible either by a candy-box type of roof mouting or by pulling out the entire floor and partitions from the bottom. The kitchen and dining room would have the best illumination, while the living room would be lighted more in pools by various lamps, thus making it dimmer. Doors left open would let a little light appear in the windows of the unlighted rooms or through their shades. Some attempt should be made with a lighted house to indicate furnishings in the interior since a light seems to most people to be an invitation to look in.

The amount of detail you add to the interior or exterior of model houses naturally depends upon your own ingenuity and patience, for in few cases do the materials cost much. For instance, shutters set off the windows very nicely, but

take time to make and install. They are made from colored bristol with the louvres marked in black ink. A garden might be modeled with bits of thread, yarn, sponge, etc., and plenty of bean poles, manure piles, tools and other atmosphere. Children's play equipment such as slides, swings, etc., can be faked from wire, cardboard and paint.

From these suggestions, you should be able to make a model of practically any home. Many plans appear in home magazines which can be simplified to suit your needs. Better still, try modeling your own home or that of a friend.

ELECTRICAL QUIZ

Q. *How can the proper wattage transformer be selected for a model railroad system?*

A. The watts taken by each train to be simultaneously operated on your system, should be ascertained from the manufacturer or else measured on D.C. with a voltmeter and ammeter. Suppose, for example, that you wished to operate six trains at the same time on your road, and that the six trains consumed 150 watts when running at normal speed. It is usual to allow design for 50% overload on average electrical systems, but in this case and allowing for the large start current taken by these locos when hauling heavy trains, it would seem best to allow 100% overload factor, and select a 300 watt transformer. In measuring the current on 6 volts D. C., for example, the watts taken by the loco when hauling a train is computed by multiplying the volts by the amps. if the volts as indicated on the voltmeter is 5 V, and the average current is 5 amps. the wattage is 5 × 5 or 25 watts.

Q. *What causes excessive sparking at the wheels of a loco?*

A. An overloaded motor (too long a string of cars) may cause this trouble. A partly burned out motor or one with a partial short circuit in its windings or in its brush holder insulation would prove another cause of excessive sparking. If the motor is tested and found OK, it will pay to look over the wheels and frame of the loco to see that all of the current is not being picked up by one wheel. Sparking will be reduced in proportion as the number of current collection paths are multiplied, the current in amperes being thus distributed among several wheels.

Q. *How is the resistance of a voltage dropping resistor determined?*

A. The resistance of the coil or other device employed to lower applied potential is computed by dividing the voltage drop desired by the current to be passed through the resistor. Example—if a drop of 12 volts is desired and the current to be passed through the circuit is 5 amperes, the resistance needed to effect this drop in potential is *Vts. Drop divided by I* (current in amps.) or $12/5 = 2.4$ ohms. This may be made up of a spiral of resistance wire such as German Silver, Nichrome, etc. Even iron wire has been used in a pinch. Size of resistance wire should be chosen from a table of such wires in which the current-carrying capacity of different gauge wires are given.

ALONG THE TINPLATE TRACK

(Continued from page 22)

suggested above, though it is the only one that can be advanced at present, hardly seems a valid explanation, although it is believed by those who have gone into the matter that C. & F. very closely imitated the trolleys and locomotives found near Cincinnati.

Before passing from the C. & F. coal mining locomotive, it should be recorded that there are two basic types of this. In the earlier model, the casing has angular corners, and in the later version, the center of the casing is raised and the corners are rounded. Both models have reverses, although it is just possible a very early non-reversible model was made at its inception in 1898.

The steam type, an 0-4-0 with eight-wheel tender, number 4 in accord with the previously established sequence, appeared in 1899. It was 18" long with tender, 4" wide, 5½" high, weighing 3 lbs., with 2" diameter drivers having connecting rod and drive rod. This model is pictured this month. The headlight was a dummy, of course. In fact, Carlisle & Finch never actually manufactured any piece of motive power with a working headlight. Lettering and detail on cab and tender was printed on paper which was then pasted onto the metal siding. The locomotive frame was of wood, to insulate the mechanism. Tender trucks also had inside frames of wood, although the wheels were of cast iron.

At the beginning, only four type of cars were made for the locomotive, 10" flat and box cars and 12" baggage and passenger cars. These, too, had iron wheels and inside wooden truck frames. A link and pin coupler was used on these earliest cars, but was soon replaced by a device peculiar to C. & F. The ends of all cars and tenders were made with rounded metal bows, which formed both coupler and end plate or buffer. A "U" shaped piece of wire, or an ordinary staple, was dropped across the bows of two adjoining cars to couple them. This bow coupler arrangement may be seen in the illustrations of the train and switch engine.

Those interested in a price comparison with modern electric trains will be interested to know that in 1902 a two car freight train (box and flat car) and a three car passenger train retailed for $10.00 and $12.00, respectively. The "flat car" of 1902 was actually what we would call a gondola, and the name was subsequently corrected to "gondola flat car" when C. & F. brought out a real flat car around 1905. It is this latter car which is shown in the set, along with a very interesting and unusual C. & F. car, a working electric derrick car!

This derrick car (*$5.00 in 1905*) consisted of a cast iron derrick mounted on

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the wooden platform of the car with an electric motor geared to the derrick. The car itself was not propelled by a motor, but was hauled like any other car. This car was, of course, one of C. & F.'s big moments, and it seems odd that they did not stress it more in the few years that they made it. It was manufactured from about 1904 to 1907. To the best of our knowledge, it was the only electrically operated derrick car made in tinplate.

About 1904, the early type No. 4 was replaced by the model illustrated with the train, the most important development being that the cab windows were actually cut out (as they were in all subsequent C. & F. locos) and the lettering and lining embossed or painted on. It will be noted that the cab used on this No. 4 and also on the No. 20 tank engine illustrated have windows with round tops and carry the number "171." Later versions of these locomotives have cab windows with square tops and are numbered "131." The very last models made substitute a flat stamped brass drive rod for the round wire drive rod used previously.

The second type steam outline locomotive produced by Carlise & Finch was the No. 20 0-4-0 tank model. This very closely resembled the No. 4, but had the cab moved forward on the boiler and was fitted with a coal bunker. The first models (here illustrated) had a tin step at the front. Later productions were fitted with cast pilots at both ends.

The price of the No. 4 was $6.50, the No. 20 only fifty cents less. It was, therefore, not altogether a price differential which attracted early customers to the tank engine, but a desire to use it for its catalog avowed purpose of "moving cars on sidings, making up trains and similar work." It was listed as a "switch engine."

The No. 20 was soon followed by the No. 45 Atlantic type, which was C. & F.'s locomotion masterpiece, and one of the great tinplate engines of all time. It was asserted that it was "made exactly according to scale," and while it might not come up quite to this level by modern standards, when one is able and willing to make the necessary allowances for the times, it remains a pretty good model. The engine was modeled after the Atlantics of the C. C. C. & St. L. and a comparison of the model with photos of the prototype is not too disadvantageous to the No. 45.

This 4-4-2 was 27½" long and required a radius of at least 30". Special large size freight and passenger cars were produced for it. Carlisle & Finch boasted that there was nothing to wear out or get out of order if properly handled. The motor was unique in tinplate, being of the Gramme type, with the six-pole armature resembling a wheel. From about 1906 to 1910, the No. 45 was completely finished in beautiful nickel plate.

The decline in price of the No. 45, from $22.00 ($25.00 with 36 feet of track and ten dry cells) to $13.50 in 1913-15 is sadly symbolic of the entire history of the Carlisle & Finch trains. The line was finally dropped in favor of other products, rather than attempt to make the changes and additions necessary to bring it up to date and competitive on a full scale with other makes of electric trains of the 1910-16 period.

While the line was still on the upward track, however, and innovations the order of the day, it was seen that there was too great a gap between the No. 4 and No. 45 locomotives. Accordingly, in 1908, a smaller Atlantic type was brought out, the No. 34. This model was 23" long, perhaps a bit too short, for it gives the impression of many wheels being spaced too closely together. No doubt this was an attempt to rectify a defect in the No. 45, which seemed to be slightly long for its 4-4-2 wheel arrangement.

The No. 34 locomotive was the fourth and last steam type made by Carlisle & Finch. In fact, it was the last new unit of motive power brought out by C. & F., and enjoyed a youth of some sunshine and popularity. The 1908 catalog heralded it as "our new Atlantic Type Locomotive for 1909." In 1914, it was still "our new Atlantic Type Locomotive," but the year was omitted. A competent enough model, it somehow lacks much of the romance and glamour which attaches to the other C. & F. steam types.

It seems probable that a 4-4-0 locomotive was also contemplated by C. & F., but was never put into production. This is pictured in some ads in the early 1900's, and was along the lines of an expanded version of the first model of the No. 4. It was, no doubt, abandoned in favor of the No. 45.

The handmade sample of an improved 0-4-0 of considerable merit and grace survives in the collection of Don McClain, of Cincinnati, who obtained it from the family of one of C. & F.'s old toolmakers. It featured a working headlight and provides testimony that the line was not abandoned without considerable thought being given to its improvement and continuation.

What this continuation might have resulted in, and what place this pioneer manufacturer might hold in the industry today are intriguing subjects for contemplation. A line of electric train development within one make from 1896 on would provide an interesting yardstick for the whole of American tinplate electric train progress.

As it is, their little brass trolleys, the pioneering No. 4, and the glorious No. 45, provide a fascinating and nostalgic backdrop for their heirs, the modern electric train of today, and of tomorrow.

R. R. CLUB NEWS

(*Continued from page 4*)

tional wicks will dry the clean rail and improve operation of their models. Pete Peterman and Russ Miller are the boys responsible for this job.

INDIANAPOLIS, IND. While an intensive search for club layout space is being conducted, the Indianapolis HO Gauge Model Railroad Club members continue to be busily engaged in construction of two portable projects. One is the Club's test panel to be used for checking the member's rolling stock, locomotives and power supplies for compliance with NMRA standards. It will

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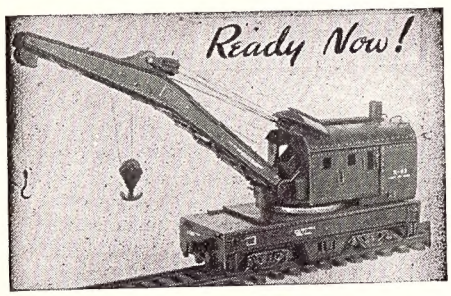

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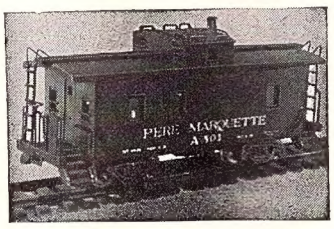

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48 LARGE SIZE PLANS for building a variety of Railroad equipment. Model Railroad Plan Package—$1.00 pp. Model Craftsman, Ramsey, N. J.

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Interested in forming a race car club in HUDSON VALLEY, N. Y., contact John Heiser, 98 Green St., Kingston, N. Y.

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BLUEPRINTS—Projectile toy-gun 25¢ and toy-rifle 25¢ Projectiles cardboard airplanes, blimps, arrows, propellers, bullets, etc. Mi-Pal Co., 2137 Arthur Ave., Bronx 57, New York.

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MISCELLANEOUS

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Design and construction supervision is under the direction of the Club Standards and Inspection Committee, Wm. Outcalt, Wm. Fetter and Conner Jester.

A 5' x 10' portable operating layout is being built under supervision of a committee consisting of Earl Templeton, James Smith and Andy Anderson.

BIRMINGHAM, ALA. A group of HO fans (eight members to date) are now organizing a model railroad club with intention of serious model railroading. No Club officers or name has yet been selected but will be taken up at their next meeting. Anyone in the Birmingham area interested in joining this club should contact either P. R. Owens by phone (2-4741) or Fred Conniff (59-2767). These fellas will tip you off as to time and place of future meetings.

SANTA BARBARA, CALIF. The Channel Railroad Club has just purchased an additional 1000 feet of Athearn's O-gauge steel rail and have some very interesting plans in mind calling for an extension of the line from Edison to some virgin territory in their outer basement room. The boys plan to construct a large terminal for the big city that is expected to be erected when the railroad enters the field.

Still another expansion in mind is the building of Hidden Valley Yards, a project which has long been curtailed because of the recent war. Hidden Valley should be remembered by many readers as one of your favorite authors, Leon Bartholomew, has often referred to it in his articles. This is unique since it is inside a large mountain on their layout, entirely out of sight of any onlookers. The scheduled yard will be capable of holding 200 cars, which will be built beside a long passing siding. This particular section has always been a daring piece of trackage, for the very reason that it is out of view of the operators. On many an occasion, a car has keeled to the floor from excessive speed. But now that Hidden Valley will be made into a division with its own operator, trains will pass through unharmed. As they mention in their Club Paper, "No longer will some joker drop a bucket on the concrete floor when a train is passing through and give the operators heart failure!"

ATTENTION—RR CLUBS!

This publication would like to have all the advance information possible on your club and individual member activities. Send us photos of your equipment and layouts. We want to show OTHER CLUBS what YOU are doing!

—The Editor

NEW PROTOTYPE CAR

REUHL PRODUCTS, INC., announces production of their new Indianapolis prototype race car, featuring a FiberGlas body. The car is designed for either cable or rail racing, and because of its plastic body, is extremely light and well balanced. Weighing only 3 lbs., 14 ozs. without motor and accessories, the car has an overall length of 17", 5¾" high, with 12½" wheelbase and 7½" tread.

Running gear features a front drive with 2 to 1 steel bevel gears running in oil, skid proof rear axle, rubber axle mountings both front and rear, 5 precision ball bearings plus 3 sealtite bronze bearings, and a new type double universal with a light connecting link to prevent breakage of either gears or engine crankshaft.

Styling is strictly prototype, the finished model looking exactly like an Indianapolis racer. Deluxe accessories, such as windshield, steering wheel, exhaust pipe, etc., will be available to those who desire to dress up the car for a more realistic appearance.

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11″ Diameter		6″	8″	10″	
12″ Diameter		6″	8″		
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*Has 1/8″ crankshaft hole. **Has 3/16″ crankshaft hole. All other sizes are ready-bored with 1/4″ hole.

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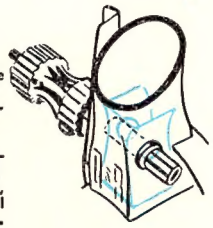

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